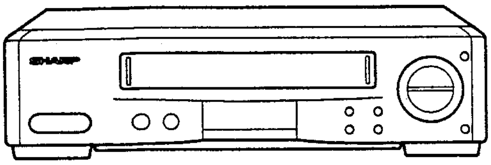
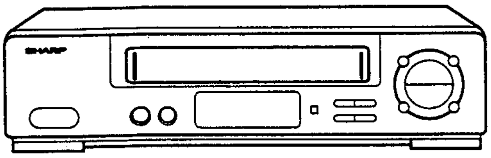
SHARP SERVICE MANUAL

S97E6VC-M29FP

VHS VIDEO CASSETTE RECORDER



except VC-MH66FPM



VC-MH66FPM

VC-M29FPM
VC-M49FPM
VC-MH66FPM
VC-MH68FPM
MODELS VC-MH69FPM

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

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SHARP CORPORATION

PRECAUTIONS IN PART REPLACEMENT

When servicing the unit with power on, be careful to the section marked white all over.
This is the primary power circuit which is live.
When checking the soldering side in the tape travel mode, make sure first that the tape has been loaded and then turn over the PWB with due care to the primary power circuit.
Make readjustment, if needed after replacement of part, with the mechanism and its PWB in position in the main frame.

(1) Start and end sensors: D715 and D714

Insert the sensor's projection deep into the upper hole of the holder (LHLDZ1893AJ00). Referring to the PWB, fix the sensors tight enough.

(2) Photocoupler RH-FX0008GEZZ: IC901

Refer to the symbol on the PWB and the anode marking of the part.

(3) Cam switches A and B (RH-PX0238GEZZ): D712 and D711

Adjust the notch of the part to the white marker of the symbol on the PWB. Do not allow any looseness.

(4) Take-up and supply sensors (RH-PX0252GEZZ): D716 and D717

Be careful not to confuse the setting direction of the parts in reference to the symbols on the PWB. Do not allow any looseness.

(5) Diode bridge (RH-DX0083GEZZ): D901

Adjust the + marking of the part to the symbol's cathode marking on the PWB.
It is matters that demand special attention at the time of a repair.

Do a repair after discharge completely and do both ends of C909 a shortstop with resistance without fail, because there is a remaining electric charge. (over 10 kΩ)

1. SPECIFICATIONS

Format: VHS PAL/SECAM standard
Video recording system: Two rotary heads, helical scan system
Video signal: PAL colou/SECAM and I signals, 625 lines
Recording/playing time: 240 min max. with SHARP E-240 tape (PAL/SECAM SP)
480 min max. with SHARP E-240 tape (PAL/SECAM LP) (except VC-M29FPM)
NTSC playing time: (except VC-M29FPM) 160 min max. with SHARP T-160 tape (SP)
320 min max. with SHARP T-160 tape (LP)
480 min max. with SHARP T-160 tape (EP)
Tape width: 12.7mm
Tape speed: 23.39 mm/s (PAL/SECAM SP)
11.70 mm/s (PAL/SECAM LP) (except VC-M29FPM)
33.35 mm/s (NTSC SP) (except VC-M29FPM)
16.67 mm/s (NTSC LP) (except VC-M29FPM)
11.12 mm/s (NTSC EP) (except VC-M29FPM)
Antenna: 75 ohm unbalanced
Receiving channel: VHF Channel E2-S41
UHF Channel E21-E69
RF booster output : Through signal
Power requirement: AC230V, 50Hz
Power consumption: Approx.19 W (AC230V/50Hz) /4W Max. (at stand-by mode) (VC-M29FPM/M49FPM)
Approx. 24W (AC230V/50Hz) /4.5W Max. (at stand-by mode) (VC-MH66FPM/MH68FPM/MH69FPM)
Operating temperature: 5°C to 40°C
Storage temperature: –20°C to 55°C
Weight: Approx. 3.5 kg
Dimensions: 360 mm (W) x 286 mm (D) x 94 mm (H)
VIDEO
Input: 1.0 Vp-p, 75 ohm
Output: 1.0 Vp-p, 75 ohm
S/N ratio: 45 dB (SP mode)
Horizontal resolution: Approx. 260 lines (SP mode with Super Picture)
AUDIO 0 dBs = 0.775 Vrms
Input: Line1: –3.8 dBs, 10k ohm
Line2: –3.8dBs, 10k ohm
Line3: –5dBs, 47k ohm (VC-MH66FPM/MH68FPM/MH69FPM)
Output: Line1: –3.8 dBs, 1k ohm
Line2: –3.8dBs, 1k ohm
REAR RCA: –5dBs, 1k ohm (VC-MH66FPM/MH68FPM/MH69FPM)
S/N ratio: 46 dB min. (SP mode)
Frequency responce: 80 Hz ~ 10 kHz (SP mode)
80Hz ~ 5kHz (LP mode) (except VC-M29FPM)
Hi-Fi dynamic range: 85 dB min. (VC-MH66FPM/MH68FPM/MH69FPM)
Hi-Fi WOW and flutter: 0.005% Max. (VC-MH66FPM/MH68FPM/MH69FPM)
Hi-Fi Frequency responce: 20Hz ~20kHz (VC-MH66FPM/MH68FPM/MH69FPM)
Hi-Fi Distortion: 0.5% Max. (VC-MH66FPM/MH68FPM/MH69FPM)
Hi-Fi closs talk (at 1kHz): 60dB min. (VC-MH66FPM/MH68FPM/MH69FPM)
Accessories included: 75 ohm coaxial cable
Operation manual
Infrared remote control
RGB cable
Battery (2pcs.)

As part of our policy of continuous improvement, we reserve the right to alter design and specifications without notice.

Note: The antenna must correspond to the new standard DIN 45325 (IEC 169 - 2) for combined UHF/VHF antenna with 75 ohm connector.

2. DISASSEMBLY AND REASSEMBLY

2-1 DISASSEMBLY OF MAJOR BLOCKS

TOP CABINET : Remove 4 screws ①.

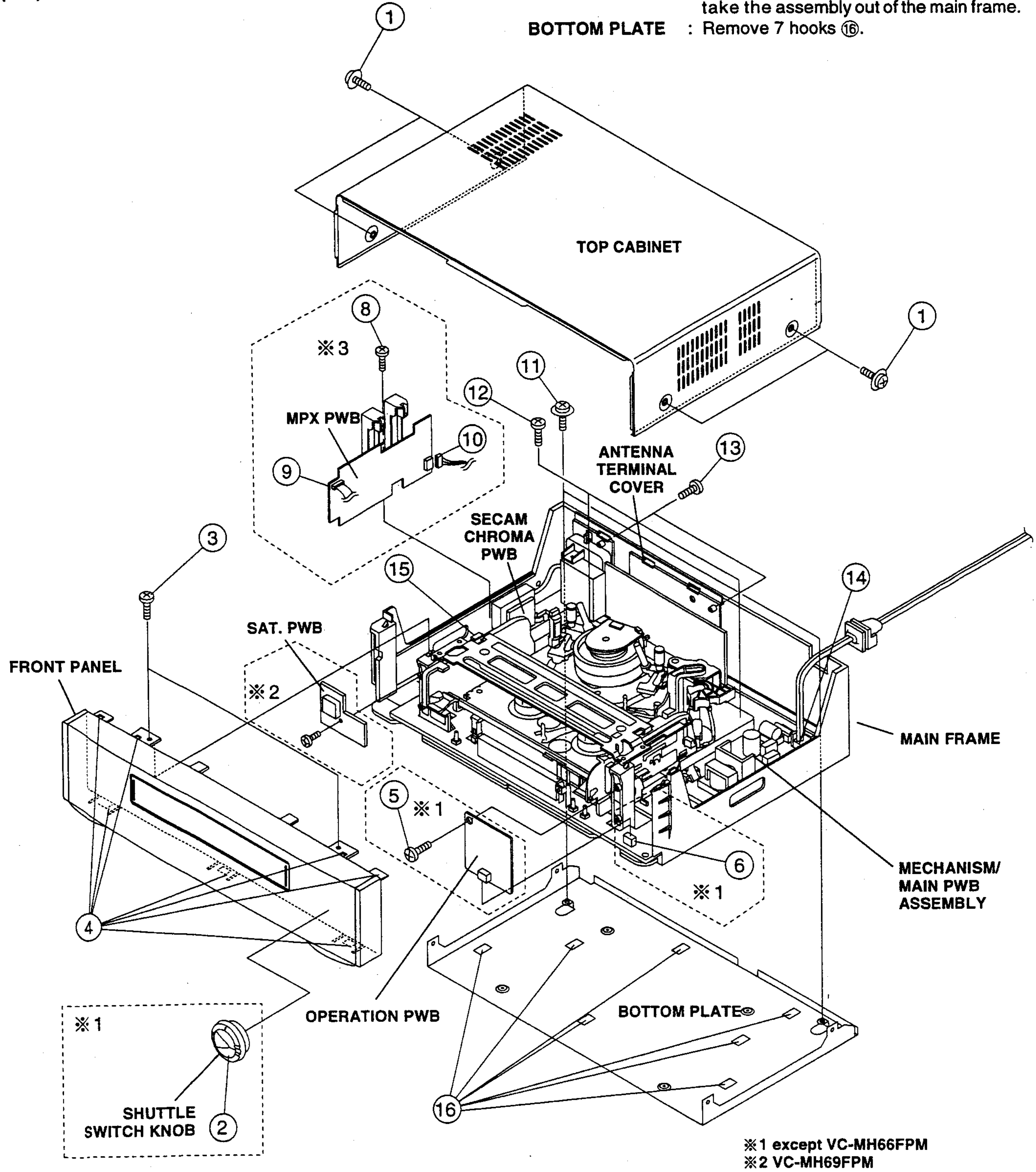
FRONT PANEL : Remove shuttle switch ②. Remove 2 screws ③ and 7 clips ④. Remove SAT. PWB (※2).

OPERATION PWB (※1) : Remove 1 screw ⑤ and take it out of connector ⑥.

MPX PWB (※3) : Remove 1 screw ⑧, 1FFC ⑨ and 1 connector ⑩.

MECHANISM/ MAIN PWB ASSEMBLY : Remove 2 screw ⑪, 2 screws ⑫, 2 screws ⑬ and 1 connector ⑭. Remove 1 hook ⑮.
Lift the antenna terminal cover and take the assembly out of the main frame.

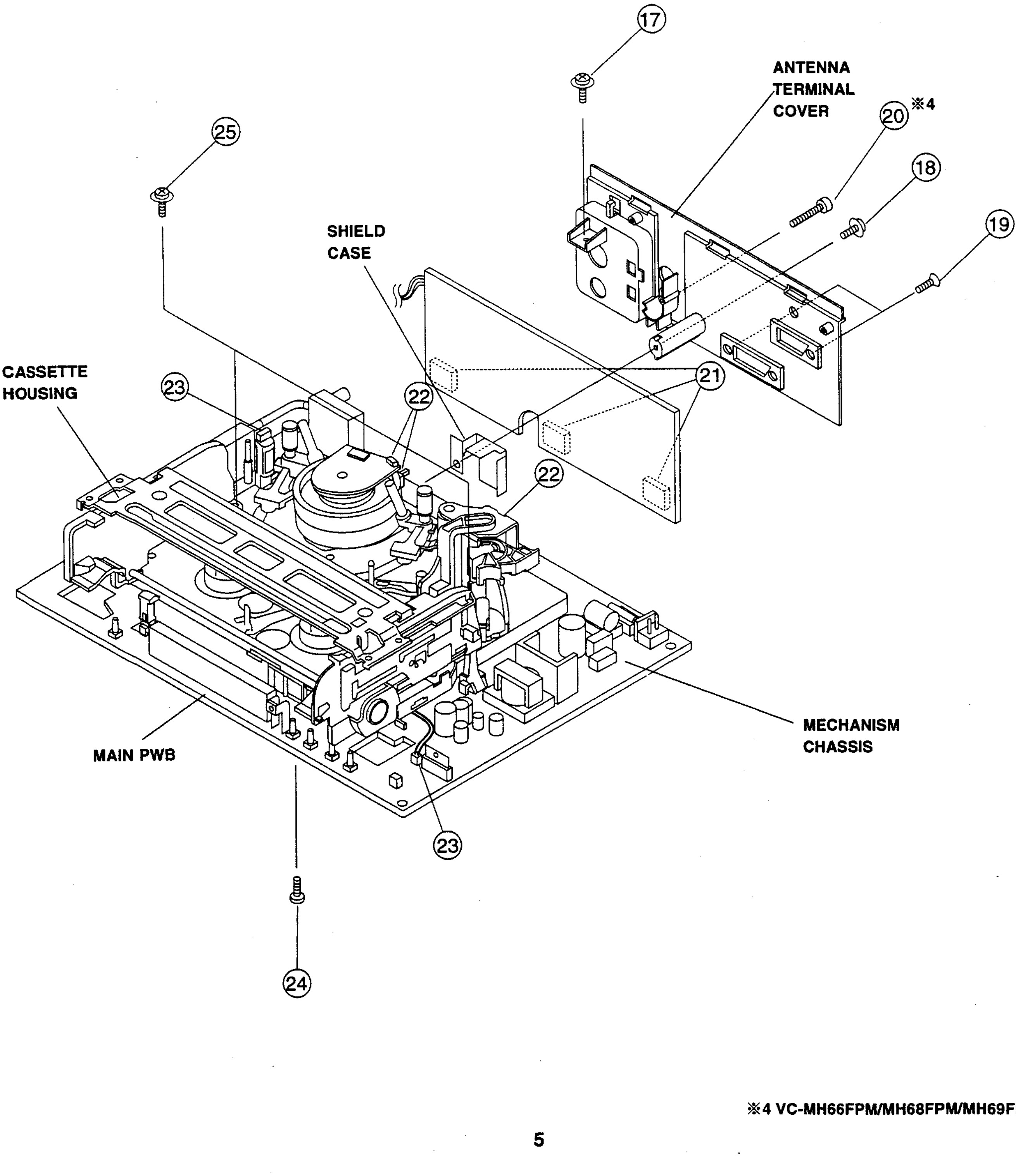
BOTTOM PLATE : Remove 7 hooks ⑯.


①
TOP CABINET
①
⑧
※3
⑪
⑫
MPX PWB
⑩
⑨
ANTENNA TERMINAL COVER
⑬
SECAM CHROMA PWB
③
⑮
⑭
SAT. PWB
※2
FRONT PANEL
MAIN FRAME
⑤
※1
⑥
※1
MECHANISM/ MAIN PWB ASSEMBLY
④
※1
OPERATION PWB
BOTTOM PLATE
SHUTTLE SWITCH KNOB
②
⑯

※1 except VC-MH66FPM
※2 VC-MH69FPM
※3 VC-MH66FPM/MH68FPM/MH69FPM

2-2 DISASSEMBLING THE MECHANISM/MAIN PWB ASSEMBLY

ANTENNA TERMINAL COVER	: Remove 1 screw ⑰, 1 screw ⑱ and 2 screw ⑲. Remove 1 screw ⑳ (※4).
TERMINAL PWB	: Take it out of 3 connectors ㉑. Remove the shield case.
MECHANISM CHASSIS/ CASSETTE HOUSING ASSEMBLY	: Remove 3 FFCs ㉒ and 2 harnesses ㉓. Be carefull not to confuse the top and bottom of the FFC.Remove 1screw ㉔ from behind the main PWB. Remove the mechanism chassis assembly straight up from the main PWB with care not to damage theirs urrounding parts.
CASSETTE HOUSING	: Remove 2 screws ㉕.


⑰
ANTENNA
TERMINAL
COVER
⑳ ※4
⑱
⑲
㉕
SHIELD
CASE
CASSETTE
HOUSING
㉓
㉒
㉑
㉒
MECHANISM
CHASSIS
MAIN PWB
㉓
㉔

※4 VC-MH66FPM/MH68FPM/MH69FPM

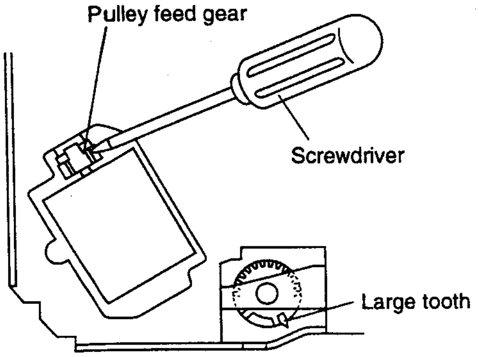
2-3 PRECAUTIONS IN REASSEMBLING

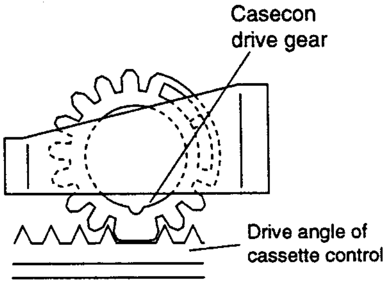
MOUTING THE CASSETTE CONTROLLER

Initial setting is indispensable before placing the cassette controller in the mechanism. The initial setting is made in two ways; electrical and mechanical.

Electrical setting:

Make a short-circuit between TP5003 and TP5004 and be sure that the mechanism is back to its initial setting position (*1). Now place the cassette controller in position.(This method is used when the mechanism has been already set on its PWB.)





Mechanical setting:

Turn the loading motor's pulley feed gear using a screwdriver and be sure that the mechanism is back to its initial setting position (*1). Now place the cassette controller in position. (This method is applicable for the mechanism alone.)

COUPLING THE MECHANISM TO THE PWB

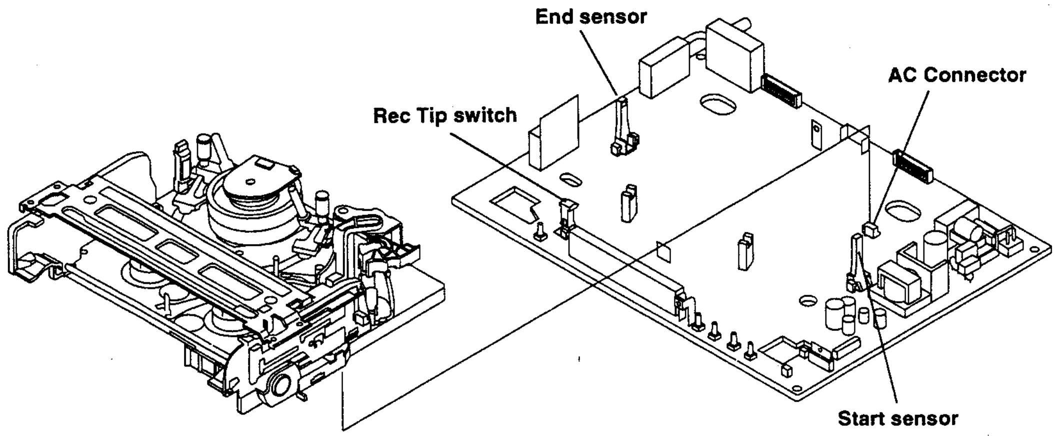
Match the mechanism's projections with the two symbols (round reference and oval sub-reference) on the main PWB. Place the mechanism straight down in position with due care so that the mechanism chassis's outer edges should not damage any parts nearby.

Tighten up the two screws (one for fixing the mechanism and the head amplifier shield, the other on the main PWB's soldering side and located near the loading motor) to fix the mechanism and main PWB. Reconnect the FFC cables (AD, AH and AA) and harness (AE and AL) between the mechanism and main PWB.

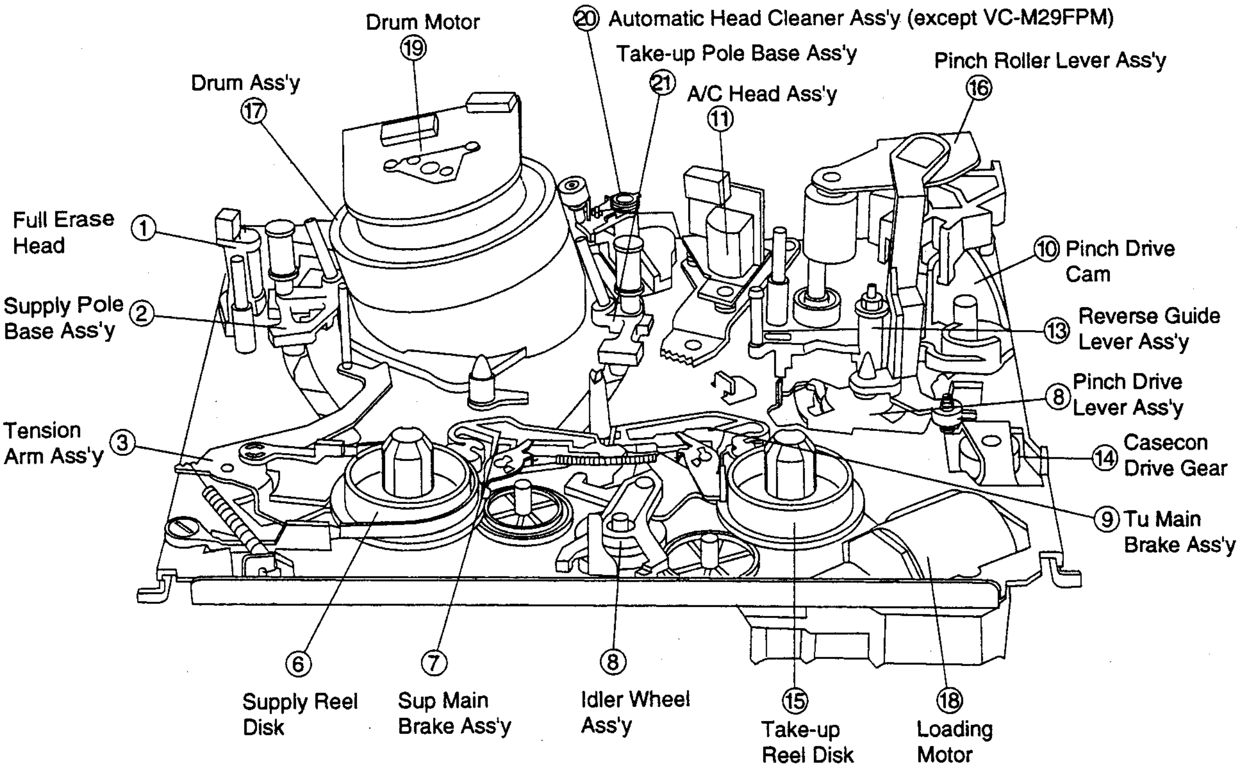
Parts to pay attention to:

Start and end sensors	D715 and D714
Rec tip switch	S701

Take special care of the AC connector (board to board) between the mechanism and main PWB.

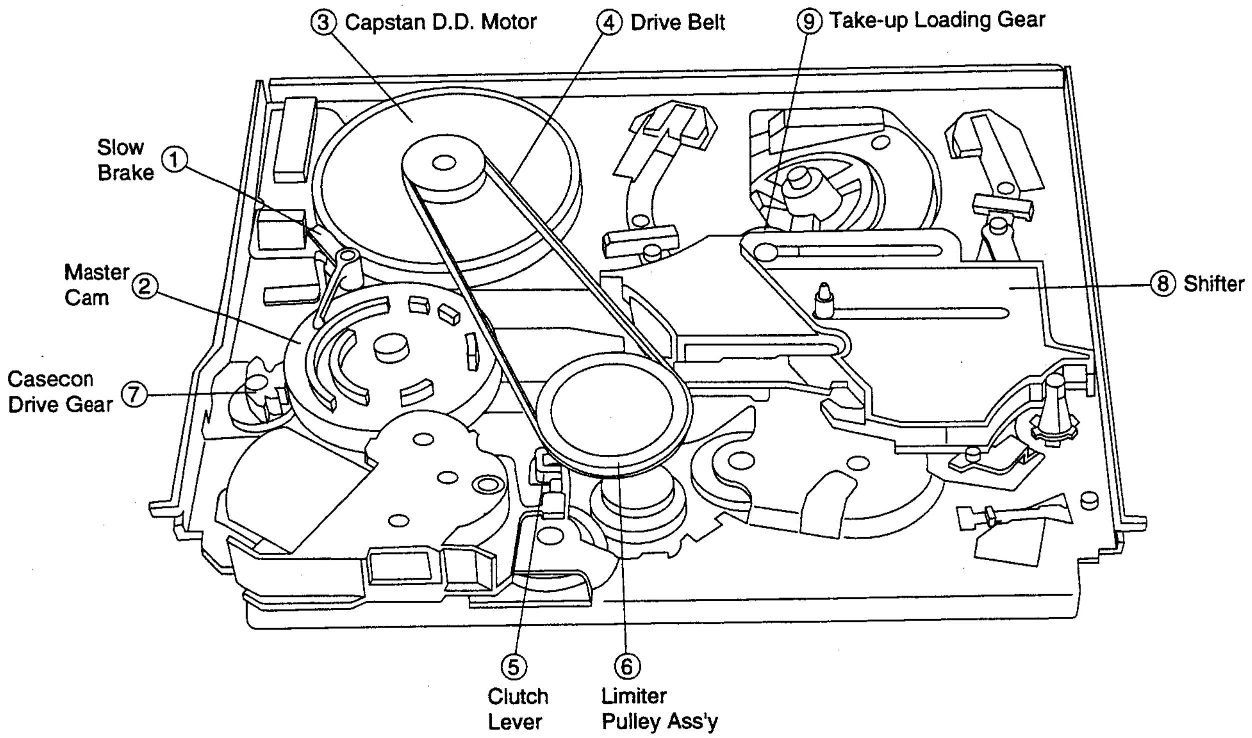


3. FUNCTION OF MAJOR MECHANICAL PARTS (TOP VIEW)


⑳ Automatic Head Cleaner Ass'y (except VC-M29FPM)
Drum Motor ⑲
Take-up Pole Base Ass'y ㉑
Pinch Roller Lever Ass'y ⑯
Drum Ass'y ⑰
A/C Head Ass'y ⑪
Full Erase Head ①
⑩ Pinch Drive Cam
Supply Pole Base Ass'y ②
⑬ Reverse Guide Lever Ass'y
⑧ Pinch Drive Lever Ass'y
Tension Arm Ass'y ③
⑭ Casecon Drive Gear
⑨ Tu Main Brake Ass'y
⑥ Supply Reel Disk
⑦ Sup Main Brake Ass'y
⑧ Idler Wheel Ass'y
⑮ Take-up Reel Disk
⑱ Loading Motor

No.	Function	No.	Function
1.	Full erase head Erase the old recording on the tape in the recording mode.	13.	Reverse guide lever ass'y Pulls out the tape and controls the tape drive train height with the upper and lower guides.
3.	Tension arm ass'y Detects the tension of tape while running, and brakes the supply reel disk via the tension band.	16.	Pinch roller lever ass'y Press-fits the tape to the capstan during tape running.
7.	Sup Main brake ass'y Brakes the supply reel disk to prevent tape slackening when the unit is stopped in fast forward or rewind mode.	18.	Loading motor A motive power which drives the mechanism. It transmits the power to the master cam and cassette housing control assembly.
9.	Take-up main brake ass'y Brakes the take-up reel disk to prevent tape slackening when the unit is stopped in fast forward or rewind mode.		

FUNCTION OF MAJOR MECHANICAL PARTS (BOTTOM VIEW)


③ Capstan D.D. Motor
④ Drive Belt
⑨ Take-up Loading Gear
Slow Brake ①
Master Cam ②
Casecon Drive Gear ⑦
⑧ Shifter
⑤ Clutch Lever
⑥ Limiter Pulley Ass'y

No.	Function	No.	Function
1.	Slow brake Gets in contact with the capstan D.D. motor linking to the master cam in the slow still mode, and brakes it to a certain degree.	6.	Limiter pulley ass'y Transmits the power of the capstan D.D. motor to the reel disk via the drive idler.
3.	Capstan D.D. motor A motive power which runs the tape. It transmits the power via the Drive belt.	8.	Shifter Transmits the operation of the master cam to break ass'y. loading gear, tension arm and clutch lever.
4.	Drive belt Transmits the power to run the tape to the Limiter pulley.	9.	Take-up loading gear Shifts the take-up pole base and guide roller via the loading gear T, and applies the tape around the drum assembly, as well as transmits the power to the loading gears.

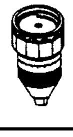
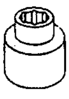
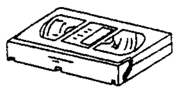
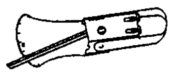
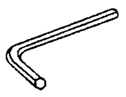
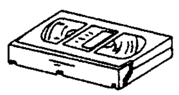
4. ADJUSTMENT, REPLACEMENT AND ASSEMBLY OF MECHANICAL UNITS

Here we will describe a relatively simple service work in the field, not referring to the more complicated repairs which would require the use of special equipment and tools (drum assembly replacement, for example).

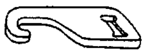
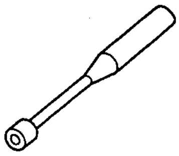
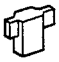
We are sure that the easy-to-handle tools listed below would be more than handy for periodical maintenance to keep the machine in its original working condition.

TOOLS NECESSARY FOR ADJUSTING THE MECHANICAL UNITS

The following tools are required for proper service and satisfactory repair.

No.	Jig Item	Part No.	Code	Configuration	Remarks
1	Reel Disk Height Adjusting Jig	JiGRH0002	BR		These Jigs are used for checking and adjusting the reel disk height.
2	Master Plane Jig	JiGMP0001	BY		
4	Torque Gauge (90g)	JiGTG0090	CM		These Jigs are used for checking and adjusting the torque of take-up and supply reel disks.
	Torque Gauge (1.2kg)	JiGTG1200	CN		
5	Gauge Head	JiGTH0006	AW		
6	Cassette Torque Meter	JiGVHT-063	CZ		This cassette torque meter is used for checking and adjusting the torque of take-up for measuring tape back tension.
7	Tension Gauge (300g)	JiGCG0300	BF		There are two gauges used for the tension measurements, 300 g and 2.0kg.
	Tension Gauge (2.0kg)	JiGSG2000	BS		
8	Hex Wrench (0.9mm)	JiGHW0009	AE		These Jigs are used for loosening or tightening special hexagon type screws.
	Hex Wrench (1.5mm)	JiGHW0015	AE		
9	—				These tapes are especially used for electrical fine adjustment.
	Alignment Tape (PAL)	VROCPSV	CK		

Video	Audio	HiFi Audio	Track
625 Monoscope	6k	—	49μm
PAL Color Bar	1k	—	49μm

No.	Jig Item	Part No.	Code	Configuration	Remarks
11	Tension Gauge Adapter	JiGADP003	BK		This Jig is used with the tension gauge. Rotary transformer clearance adjusting jig.
12	Special Bladed Screwdriver	JiGDRiVERH-4	AP		This screwdriver is used for adjusting the guide roller height.
14	Torque Driver	JiGTD1200	CB		This is used to screw down resinmade parts: the specified torque is 5kg.
15	M3 type 5.5 mm square box driver for reverse guide	JiGDRiVER11055	AR		This Jig is used for height adjustment of the reverse guide (for reverse guide height adjustment).
17	Reverse Guide Height Adjusting Jig	JiGRVGH-F18	BU		This Jig is used for height adjustment of the reverse guide.
18	Gear Driver	JiGDRiVER-6	BM		For X value adjustment

MECHANICAL PARTS REQUIRING PERIODICAL INSPECTION

Use the following table as a guide to maintain the mechanical parts in good operating condition.

Parts / Maintained	500 hrs.	1000 hrs.	1500 hrs.	2000 hrs.	Possible symptom encountered	Remarks
Guide roller ass'y	□	□	□	○	Lateral noises Head occasionally blocked	Abnormal rotation or significant vibration requires replacement.
Sup Guide Shaft	□	□	□	□		Clean tape contact part with the specified cleaning liquid.
Retaining guide	□	□	□	□		
Slant pole	□	□	□	○		
Upper and lower drum	□	○□	○□	○□	Poor S/N ratio, no colour Poor flatness of the envelope with alignment tape	Clean tape contact area with the specified cleaning liquid.
Full-erase head	□	□	□	○	Poor colour, beating	
A/C head	□	□	□	○	Low or distorted audio	
Capstan D.D. Motor	□	□	□	○	No tape running, uneven colour	
Pinch roller	□	□	□	○	No tape running, tape slack	Clean rubber and rubber contact area with the specified cleaning liquid.
Drive belt		□		○	No tape running, tape slack, no fast forward/rewind motion	
Tension band ass'y				○	Cassette not loaded or unloaded	
Loading Motor				○		
Idler Wheel ass'y				○	No tape running	
Limiter pulley ass'y		□△		○		
Supply/take-up Main brake levers				○	Tape slack	
AHC (Automatic Head Cleaner) (except VC-M29FPM)		○		○		Replace the roller of the cleaner when it wears down. Just change the AHC roller assembly for new one.

NOTE:
○: Part replacement.
□: Cleaning (For cleaning, use a lint-free cloth dampened with pure isopropyl alcohol).
△: Oil refilling (The indicated point should be lubricated with high quality spindle oil every 1000hrs).

If the reading is out of the specified value, clean or replace the part.

REMOVAL AND REASSEMBLY OF CASSETTE HOUSING CONTROL ASSEMBLY

• Removal

1. Set the cassette ejected condition in the cassette eject mode.
2. Unplug the recorder from the main source.
3. Follow the procedures below in the specified order.
   a) Remove the cassette housing installation screws ①.
   b) Slide and pull out the cassette housing control assembly upward.

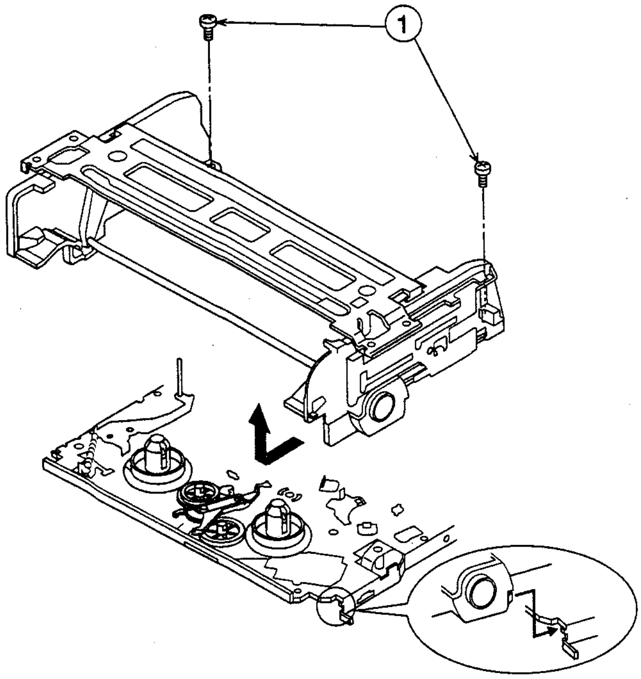


Figure 4-1.

• Reassembly

1. Before installation of the cassette housing control assembly, make a short-circuit between TP5005 and TP5006, both located at the center on your side on the main PWB. Plug in the power cord. The cassette control drive gear starts and stops just when the big face gear shows in the mechanism chassis window. Engage the tooth 2 of the casecon drive gear with the tooth 3 of the cassette control drive angle as shown in Fig. 4-2, to position the cassette control on the mechanism chassis.

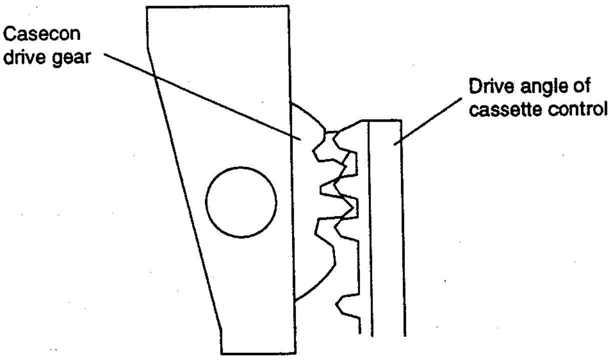


Figure 4-2.

2. Follow the procedures for removal in the reverse order.

Notes:

① In using a magnet screw driver, be sure to keep it away from the A/C head, FE (Full Erase) head, and the drum.
② In removal and reassembly, take care not to hit the cassette housing control assembly and tools against the guide pin, drum, or the like there about.
③ Load the cassette once onto the cassette housing control assembly after reassembly.

TO RUN A TAPE WITHOUT THE CASSETTE HOUSING CONTROL ASSEMBLY

1. Be sure to make a short-circuit between TP5005 and TP5006, both located at the center on your side on the main PWB before turning on the power.
2. Plug in the power cord.
3. Turn on the power switch.
4. Open the lid of a cassette tape by hand.
5. Hold the lid with two pieces of vinyl tape.
6. Set the cassette tape in the mechanism shassis.
7. Stabilize the cassette tape with a weight (500g) to prevent floating.
8. Perform running test.

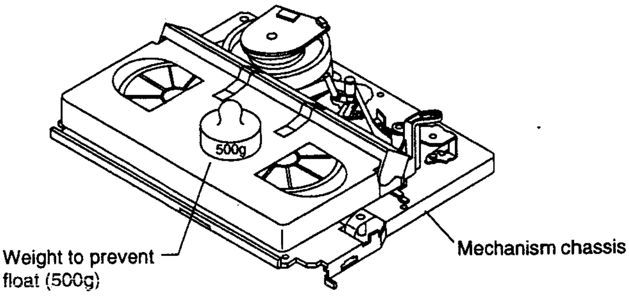


Figure 4-3.

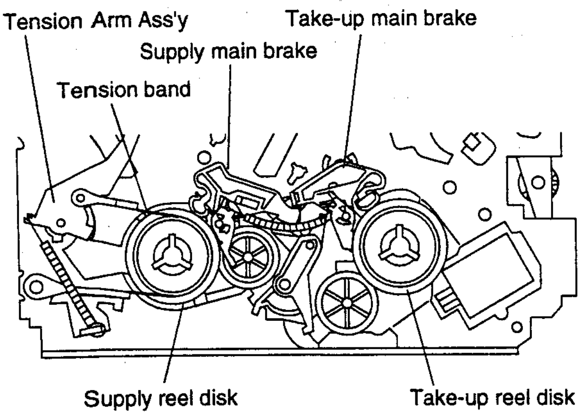
Note:
The weight should not be more than 500g.

REPLACEMENT AND HEIGHT CHECKING AND ADJUSTMENT OF REEL DISKS

- **Removal (Supply and Take-up reel disks)**

1. Remove the cassette housing control assembly.
2. Pull the tension band out of the tension arm.
3. Release the supply/take-up auxiliary brake lever by hand, which makes unnecessary removal of the supply main brake and the take-up main brake.
4. Open the hook at the top of the reel disk, and remove the reel disk.

<In the EJECT or UL STOP mode>


Tension Arm Ass'y
Take-up main brake
Supply main brake
Tension band
Supply reel disk
Take-up reel disk

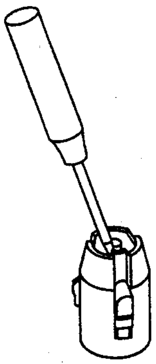


Figure 4-4.

Note:
When the tension band is pressed in the direction of the arrow for removal, the catch is hard to be deformed.

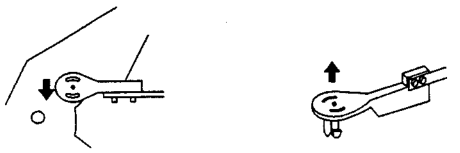


Figure 4-5.

- **Reassembly (Supply reel disk)**

1. Clean the reel disk shaft and apply oil to it.
2. Align the phase of the reel disk to that of the reel relay gear, and install a new supply reel disk onto the shaft.
3. Replace the tension band around the supply reel disk, and insert it into the hole of the tension arm with the supply auxiliary brake lever released.
4. Check the reel disk height.

Notes:

1 Take enough care not to deform the tension band during installation of the supply reel disk.
2 Be careful not to damage the supply main brake and the reel relay gear.

- **Reassembly (Take-up reel disk)**

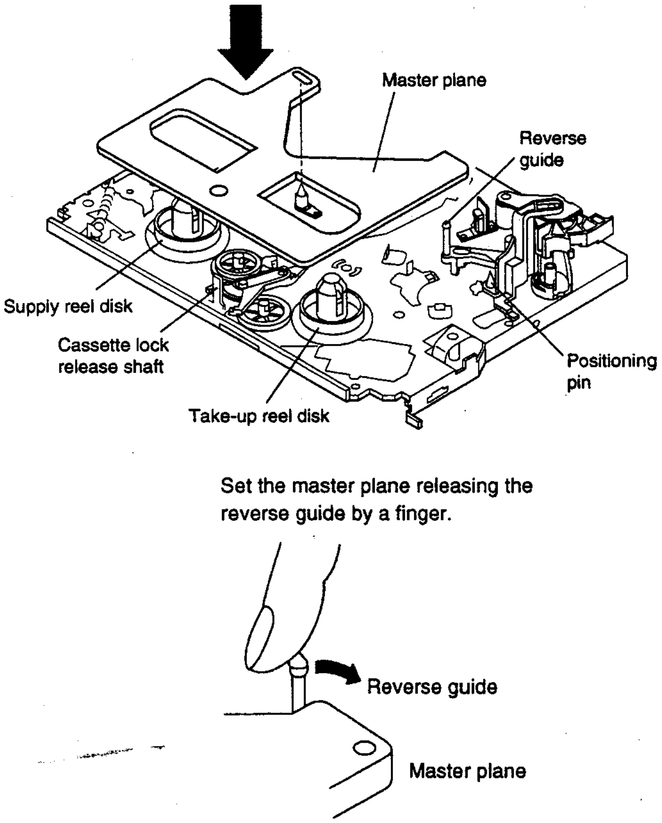
1. Clean the reel disk shaft and apply oil to it.
2. Release the take-up auxiliary brake lever to align the phase of the reel disk to that of the reel relay gear and to install a new take-up reel disk onto the shaft.
3. Check the reel disk height and reassemble the take-up main brake.

Note:
Take care not to damage the take-up main brake.

* After reassembly, check the video search rewind back tension (see page 16), and check the brake torque (see page 18).

- **Height checking and adjustment**

Note:
Place the master plane onto the mechanism unit, taking care not to hit the drum (see Figure 4-6).


Master plane
Reverse guide
Supply reel disk
Cassette lock release shaft
Take-up reel disk
Positioning pin
Reverse guide
Master plane

Set the master plane releasing the reverse guide by a finger.

Figure 4-6.

Note:
When placing the master plane, move a little the reverse guide toward the loading.

* Be careful that the reverse guide is not moved too much. Otherwise, it may be broken.

- Check that the reel disk is lower than part A but higher than part B. If the height is not correct, readjust the reel disk height by changing the poly-slider washer under the reel disk.

Note:
Whenever replacing the reel disk, perform the height checking and adjustment.

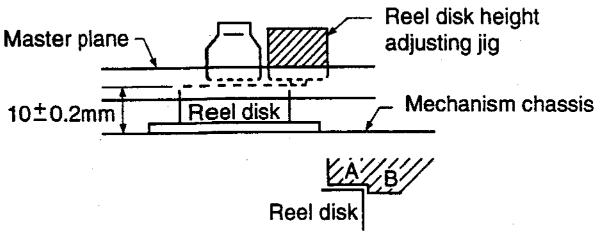

Master plane
Reel disk height adjusting jig
10±0.2mm
Reel disk
Mechanism chassis
A
B
Reel disk

Figure 4-7.

CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN FAST FORWARD MODE

- **Remove the cassette housing control assembly.**

- **Make a short-circuit between TP5005 and TP5006, both located at the center on your side on the main PWB. Now turn on the power.**

- **Setting**

1. Set a torque gauge to zero on the scale. Place it on the take-up reel disk.
2. Press the FF button to set the mechanism to the fast forward mode.
3. To calculate the remaining capacity of the play back mode, slowly rotate the supply reel disk, and then shift it into the forward mode.

- **Checking**

1. Turn the torque gauge slowly (one rotation every 2 to 3 seconds) by hand in the take-up direction.
2. Check to see if the take-up torque is higher than 69 mN·m (700 gf·cm).

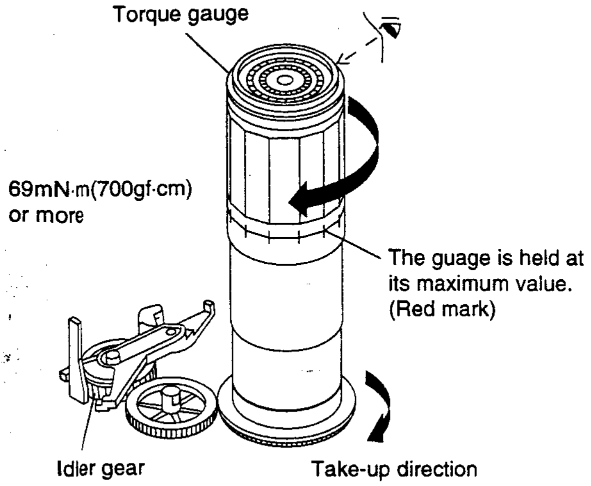

Torque gauge
69mN·m(700gf·cm) or more
The guage is held at its maximum value. (Red mark)
Idler gear
Take-up direction

Figure 4-8.

- **Adjustment**

1. If the take-up torque is outside the range, clean the capstan D.D. motor pulley, drive belt and limiter pulley with cleaning liquid, then recheck the torque.
2. If the take-up torque is still out of range, replace the drive belt.

Notes:

1. Hold down the torque gauge so that it may not fly off.
2. When checking the take-up torque, do not keep the reel disk locked for a longer time.

CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN REWIND MODE

- **Remove the cassette housing control assembly.**

- **Make a short-circuit between TP5005 and TP5006, both located at the center on your side on the main PWB. Now turn on the power.**

- **Setting**

1. Set a torque gauge to zero on the scale. Place it on the supply reel disk.
2. Press the REW button to set the mechanism to the rewind mode.
3. To calculate the remaining capacity, slowly rotate the take-up reel disk, and then shift it into the rewind mode.

- **Checking**

1. Turn the torque gauge slowly (one rotation every 2 to 3 seconds) by hand in the take-up direction.
2. Check to see if the take-up torque is higher than 69 mN·m (700 gf·cm).

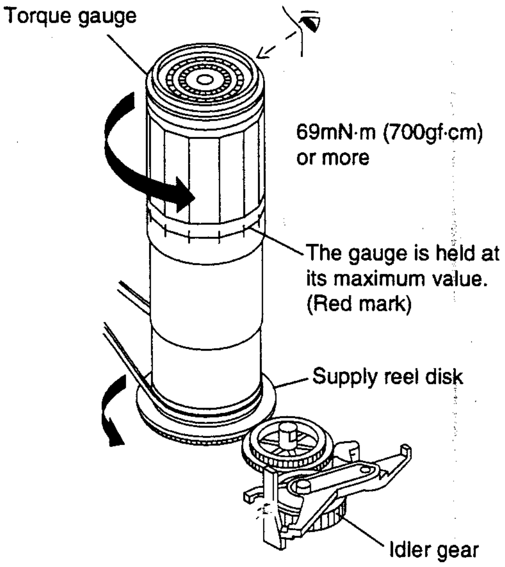

Torque gauge
69mN·m (700gf·cm) or more
The gauge is held at its maximum value. (Red mark)
Supply reel disk
Idler gear

Figure 4-9.

- **Adjustment**

1. If the take-up torque is outside the range, clean the capstan D.D. motor pulley, drive belt and limiter pulley with cleaning liquid, then recheck the torque.
2. If the take-up torque is still out of range, replace the drive belt.

Notes:

1. Hold down the torque gauge so that it may not fly off.
2. When checking the take-up torque, do not keep the reel disk locked for a longer time.

CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN PLAYBACK MODE

1. Remove the cassette housing control assembly.
2. Make a short-circuit between TP5005 and TP5006, both located at the center on your side on the main PWB. Now turn on the power.
3. Open the lid of the cassette torque meter, and hold it with two pieces of vinyl tapes.
4. Load the cassette torque meter into the unit.
5. Put the weight (500g) on the cassette torque meter.
6. Press the REC button to put the unit in REC mode.

Set value LP 9.6 ± 4.7mN·m (98 ± 48gf·cm)
※SP only model 10.5 ± 3.8mN·m (107 ± 39gf·cm)

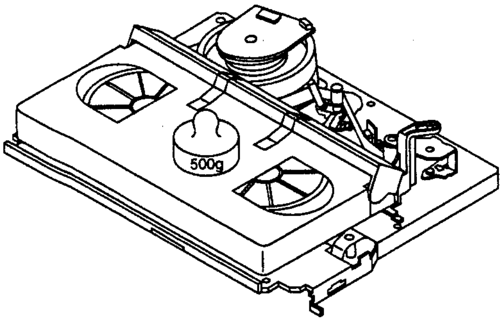


Figure 4-10.

- **Checking**

1. Check that the torque is in the range of 9.6 ± 4.7mN·m (98 ± 48gf·cm) in the LP record mode.
2. The torque fluctuates due to the rotational deviation of the limiter pulley ass'y. Use the center of the fluctuation as the value.
3. Place the ass'y in the LP record mode, and check that the take-up torque is within the range.

- **Adjustment**

If the take-up torque in the playback mode is outside the range, replace the limiter pulley ass'y.

Note:
Stabilize the cassette torque meter to prevent floating.

CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN VIDEO SEARCH REWIND MODE

- **Remove the cassette housing control assembly.**
- **Make a short-circuit between TP5005 and TP5006, both located at the center on your side on the main PWB. Now turn on the power.**

- **Setting**

1. Push the PLAY button to place the ass'y in the playback mode.
2. Push the REW button to place the ass'y in the video search rewind mode.

- **Checking**

1. Place the torque gauge on the supply reel disk, and turn it counterclockwise very slowly (one rotation every 1 to 2 seconds) and check that the torque is within the set value 13.7 ± 4.3mN·m (140 ± 45gf·cm).

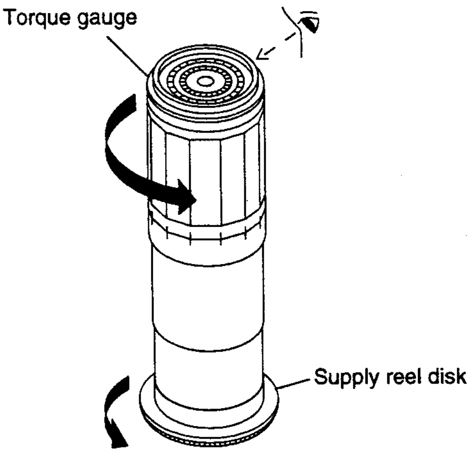


Figure 4-11.

Note:
Set the torque gauge securely on the supply reel disk. If it is not secure, the measurement will be incorrect.

- **Adjustment**

If the take-up torque in video search rewind mode is outside the range, replace the limiter pulley ass'y.

Note:
The torque fluctuates due to the rotational deviation of the limiter pulley ass'y. Use the center of the fluctuation at the value.

CHECKING THE VIDEO SEARCH REWIND BACK TENSION

- **Remove the cassette housing control assembly.**

- **Make a short-circuit between TP5005 and TP5006, both located at the center on your side on the main PWB. Now turn on the power.**

- **Checking**

1. Push the PLAY button to place the ass'y in the playback mode.
2. Push the rewind button to place the ass'y in the video search rewind mode.
3. Place the torque gauge on the take-up reel disk, and turn it counterclockwise very slowly (one rotation every 2 to 3 seconds) and check that the torque is within the set value 4.9±2mN·m (50±20gf·cm).

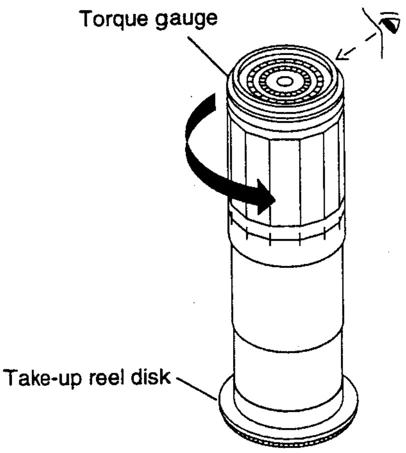


Figure 4-12.

Notes:

① Set the torque gauge securely on the take-up reel disk. If it is not secure, the measurement will be incorrect.
② Measure the torque applying the torque gauge's weight.

CHECKING THE PINCH ROLLER PRESSURE

- **Remove the cassette housing control assembly.**

- **Make a short-circuit between TP5005 and TP5006, both located at the center on your side on the main PWB. Now turn on the power.**

- **Checking**

Push the PLAY button to place the ass'y in the playback mode.

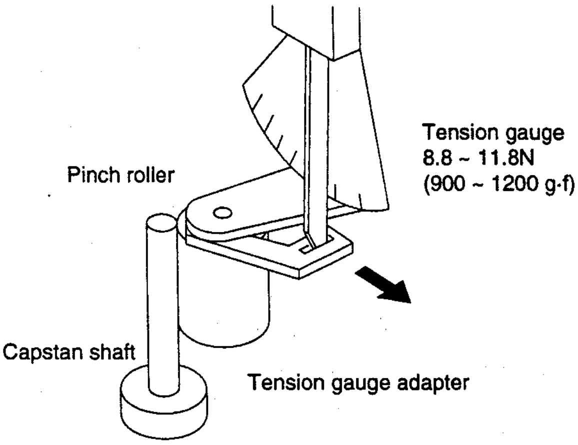


Figure 4-13.

1. Detach the pinch roller from the capstan shaft.
2. Set the tension gauge by hooking the tension gauge adapter onto the pinch roller shaft.
3. Gradually release the pressure to allow the pinch roller to touch the capstan shaft. When the pinch roller just touches the capstan shaft, read the indication on the gauge.
4. Check that the reading of the tension gauge is in the range of 8.8 ~ 11.8N (900 ~ 1,200 g·f)

CHECKING AND ADJUSTMENT OF TENSION POLE POSITION

- **Remove the cassette housing control assembly.**

- **Make a short-circuit between TP5005 and TP5006, both located at the center on your side on the main PWB. Now turn on the power.**

- **Setting**

1. Open the lid of cassette tape (E-180), and hold it with two pieces of vinyl tapes.
2. Load the cassette tape into the unit.
3. Put the weight (500g) on the cassette tape.
4. Make the adjustment with the beginning of a E-180 tape.

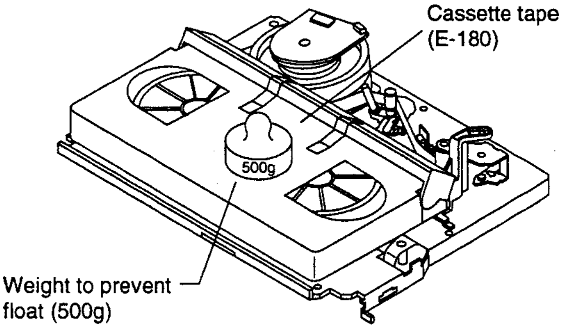


Figure 4-14.

- **Checking**

1. Set a cassette tape, press the REC button and get the tape loaded. Now check the tension pole position.

2. Visually check to see if the center of the tension pole is in alignment with the line 1.3 mm left of the center line of the sup guide shaft. Readjust as required in the following steps.

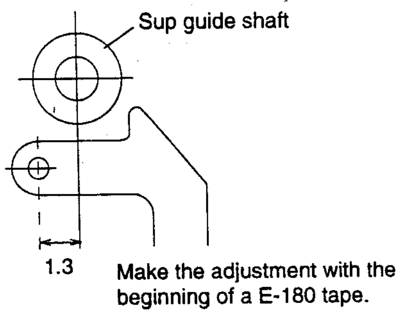

Sup guide shaft
1.3
Make the adjustment with the beginning of a E-180 tape.

Figure 4-15.

① If the center of tension pole is at the left from the dotted line:

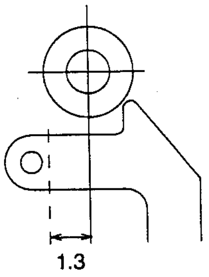


Figure 4-16.

Put a bladed screwdriver into the tension pole ADJUSTER and turn it clockwise.

② If the end is at the right from the dotted line:

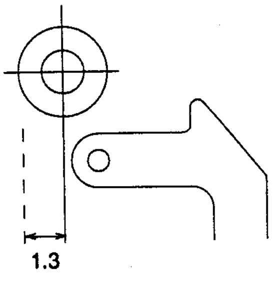


Figure 4-17.

Put a bladed screwdriver into the tension pole adjuster to turn it counter-clockwise.

③ Adjustable range of the tension pole ajuster.

④ Adjustable range of tension pole adjusting cam.

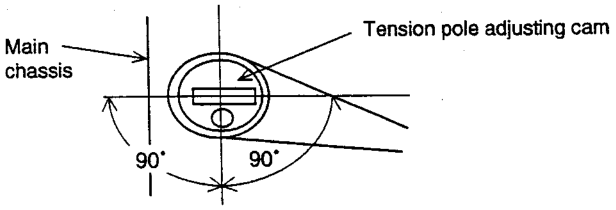

Main chassis
Tension pole adjusting cam
90°
90°

Figure 4-18.

Adjust the tension pole adjuster so that the circle mark on the cam be within 90° left and right.

CHEKING AND ADJUSTMENT OF RECORD/ PLAYBACK BACK TENSION

- **Remove the cassette housing control assembly.**
- **Make a short-circuit between TP5005 and TP5006, both located at the center on your side on the main PWB. Now turn on the power.**

- **Setting**

1. Open the lid of cassette torque meter, and hold it with two pieces of vinyl tapes.
2. Load the cassette torque meter into the unit.
3. Put the weight (500g) on the cassette torque meter.

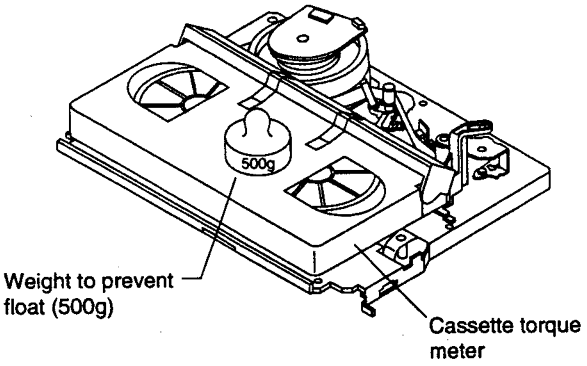

500g
Weight to prevent float (500g)
Cassette torque meter

Figure 4-19.

- **Checking**

1. Push the REC button to place the unit in the record mode.
2. Check that the back tension indicated by the gauge is within the set range 36.5 to 52 g·cm.

Notes:

1. Make sure that the video cassette tape is over the retaining guide.
2. Make sure that the tape is not slack nor damaged at either end.

- **Adjustment**

1. If the reading of the cassette torque meter is less than specified, move the tension spring hook toward A.
2. If the reading of the cassette torque meter is more than specified, move the tension spring hook toward B.

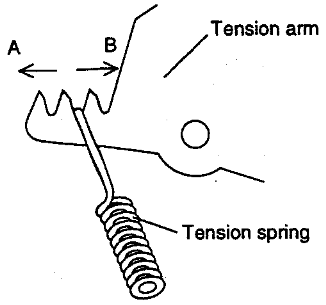
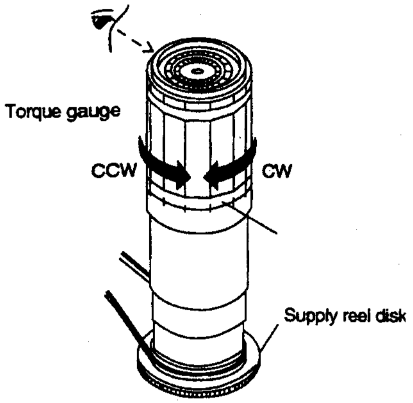


Figure 4-20.

CHECKING THE BRAKE TORQUE

- **Checking the brake torque at the supply side**



CCW: 4.9~10.8mN·m (50~110gf·cm)
CW: 7.4~31mN·m (75~315gf·cm)

Figure 4-21.

- **Remove the cassette housing control assembly.**

- **Make a short-circuit between TP5005 and TP5006, both located at the center on your side on the main PWB. Now turn on the power.**

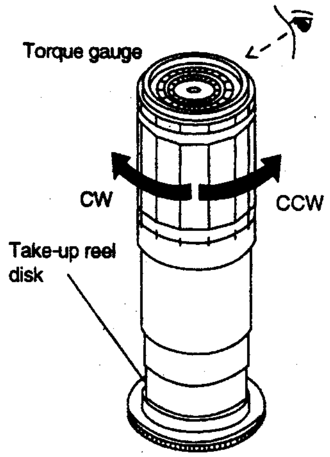
- **Setting**

1. Set a torque gauge to zero on the scale. Place it on the supply reel disk.
2. Switch from the FF mode to the STOP mode.
3. Disconnect the AC power plug.

- **Checking**

1. Rotate the torque gauge (approx. one revolution per 2 seconds) in the clockwise (CW) direction and counterclockwise (CCW) direction of the supply brake so that the reel disk and the indicator of the torque gauge rotate at an equal rate.
   Check that the values are within the range of CW direction = 7.4 ~31mN·m (75~315gf·cm), CCW direction = 4.9~10.8mN·m (50 ~110gf·cm), and that the brake torque in the CW diretion is at least twice as high as that in the CCW direction.

- **Checking the brake torque at the take-up side**



CCW: 8.8~25.5mN·m (90~260gf·cm)
CW: 3.0~9.4mN·m (30~90gf·cm)

Figure 4-22.

- **Remove the cassette housing control assembly.**

- **Make a short-circuit between TP5005 and TP5006, both located at the center on your side on the main PWB. Now turn on the power.**

- **Setting**

1. Set a torque gauge to zero on the scale. Place it on the take-up reel disk.
2. Switch from the FF mode to the STOP mode.
3. Disconnect the AC power plug.

- **Checking**

1. Rotate the torque gauge (approx. one revolution per 2 seconds) in the clockwise (CW) direction and counterclockwise (CCW) direction of the take-up brake so that the reel disk and the indicator of the torque gauge rotate at an equal rate. Check that the values are within the range of CCW direction= 8.8~25.5mN·m (90~260gf·cm), CW direction = 3.0~9.4mN·m (30~90gf·cm), and that the brake torque in the CCW direction is at least twice as high as that in the CW direction.

- **Adjustment of the brake torque at the supply side and the take-up side**

1. If the supply or take-up brake torque is outside the range, clean the supply or take-up reel disk brake lever pad, then recheck the torque.
2. If the supply or take-up brake torque is still outside the range, replace the main brake ass'y.

Note:
When the main brake is replaced, perform the height checking and adjustment of reel disks (see page 13), and the brake torque checking.

REPLACEMENT OF A/C (Audio/Control) HEAD

1. Remove the cassette housing control assembly.
2. Place the unit in the unloading mode, and unplug the power cord.

- **Removal**

1. Remove the screws ⒶⒷⒸ①②.
2. Unsolder the A/C head PWB soldered to the A/C head assembly.

Notes:

1. After replacement, be sure to perform the adjustment of the tape drive train (see page 20). Under any circumstances, avoid touching the head. Clean the head, if touched with your finger, with alcohol.
2. Take care that the springs do not fly off when removing the screws ⒶⒷⒸ.

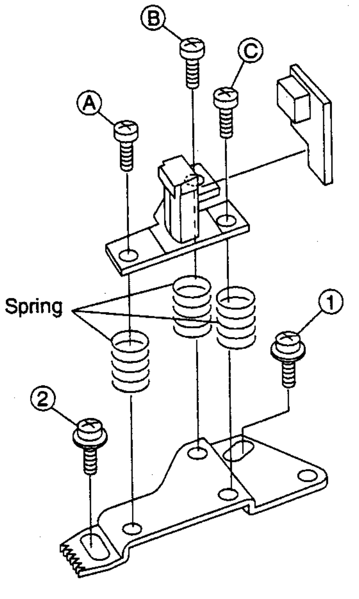
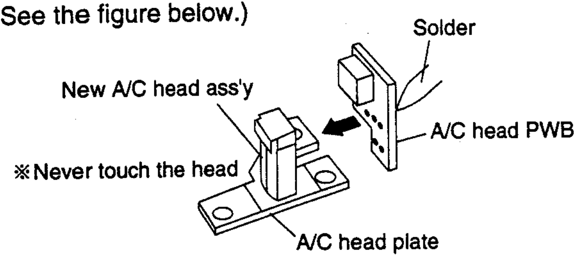


Figure 4-23.

- **Replacement**

1. Solder the removed A/C head PWB onto a new A/C head assembly.
2. Using the slide calipers, set 10.3 mm for the height of the A/C head arm (bottom surface) to the A/C head plate (screw area). (3 places)
(See the figure below.)


Solder
New A/C head ass'y
A/C head PWB
※Never touch the head
A/C head plate

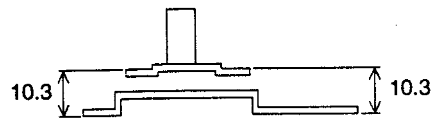


Figure 4-24.

3. Align the left and of the gear of the A/C head arm to the mark on the chassis, and temporarily tighten the screws ① and ② to allow the A/C head arm to smoothly move.
(Reference: Temporary tightening torque: 0.2 N.m as preferable)

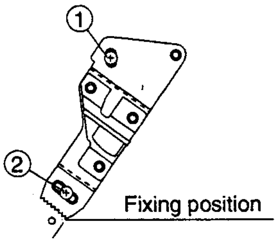

①
②
Fixing position

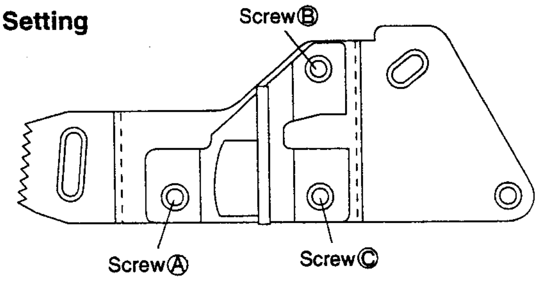
Figure 4-25.

Note:

Take care that he adjustment or height of the A/C head may vary during final tightening if the screws ① or ② is temporarily tightened to be loose.

[A/C head height rough adjustment]

- **Setting**


ScrewⒷ
ScrewⒶ
ScrewⒸ

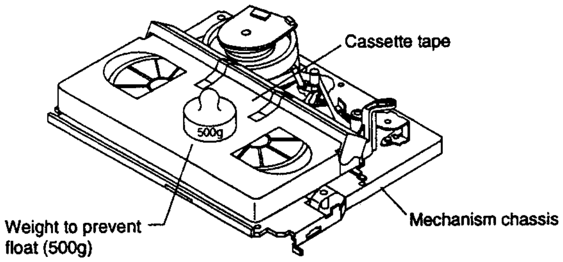

Cassette tape
500g
Weight to prevent float (500g)
Mechanism chassis

Figure 4-26.

① Set the cassette tape to the mechanism chassis.
② Press the PLAY button to the put the unit in the playback mode.
③ Roughly adjust the height of the A/C head by turning the screw Ⓒ until the tape is in the position shown below.

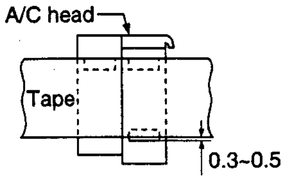

A/C head
Tape
0.3~0.5

Figure 4-27.

- **Adjustment**

Adjust the screw Ⓒ visually so that the control head is visible 0.3 to 0.5mm below the bottom of the tape.

HEIGHT ADJUSTMENT OF REVERSE GUIDE

[Height adjustment of reverse guide]

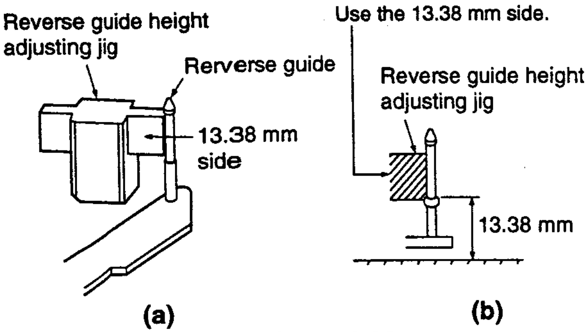

Reverse guide height adjusting jig
Rerverse guide
13.38 mm side
Use the 13.38 mm side.
Reverse guide height adjusting jig
13.38 mm
(a)
(b)

Figure 4-28.

1. In the tape load mode, make adjustment at the 13.38mm side first and then rotate the reverse guide adjuster nut by 1/10 turn counterclockwise.
2. Actually load the unit with a tape, put it in the play mode, and make sure the tape is free from wrinkles near the reverse guide.
3. Use a commercially available box driver to turn the height adjusting nut.

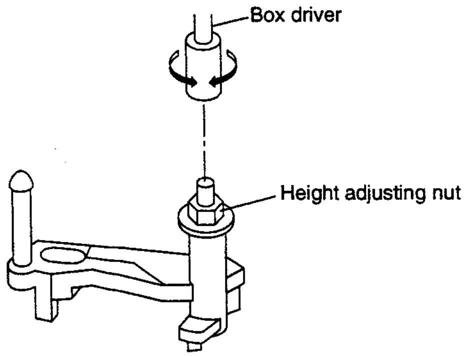


Figure 4-29.

ADJUSTMENT OF TAPE DRIVE TRAIN

1. Remove the cassette housing control assembly.
2. Make a short-circuit between TP5005 and TP5006, both located at the center on your side on the main PWB. Now turn on the power.
3. Check and adjust the position of the tension pole. (See page 16.)
4. Check and adjust the video search rewind back tension. (See page 16.)
5. Set the A/C head. (See page 19.)
6. Rough adjustment of tape drive train.
   a) Connect the oscilloscope to the test point for PB CHROMA envelope output (TP2201). Set the synchronism of the oscilloscope to EXT. The PB CHROMA signal is to be triggered by the head switching pulse (TP2202).
   b) Loosen the setscrew at the lower part of the guide roller, and adjust it with HEXAGON WRENCH (JiGHW0009) so that the guide roller turns smoothly. (Do not overloosen the setscrew, which causes insecurity of the guide roller.) (See Figure 4-30.)
   c) Set the alignment tape (monoscope pattern) on the reel disk, and place the unit in the playback mode.

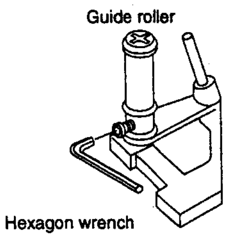


Figure 4-30.

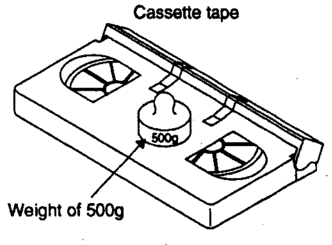


Figure 4-31.

   (Place a 500 g weight on the cassette tape to prevent floating of the cassette tape.)
   d) In the X value adjustment mode (see the Electrical Adjustment), change the envelope waveform from MAX to MIN, and MIN to MAX by pushing the (+) or (-) tracking button, and check a flat response is obtained on the waveform.
   e) If a flat response cannot be obtained, roughly adjust the guide rollers on the supply side and take-up side using an adjusting screw driver until a flat response can be obtained.
   f) Tighten the screw Ⓐ to eliminate wrinkles from the tape of the retain guide flange area.
   Replace the tape to check the tape on the retain guide flange area for wrinkles.
   (1)No wrinkle is present.
   Turn the screw Ⓐ clockwise to generate wrinkles on the tape at the flange area, and then back off the screw Ⓐ as far as the wrinkles are just eliminated.
   (2)Wrinkles are present.
   Turn the screw Ⓐ counterclockwise as far as the wrinkles are just eliminated.
   Reference:
   If the screw Ⓐ is turned clockwise, wrinkles will be produced on the lower flange.

Notes:

1. Place the tracking control in the center position, and adjust the X-position so that the PB CHROMA envelope becomes maximum for easier rough adjustment of the tape drive train.
2. In the rough adjustment, pay particular attention to the outlet side.

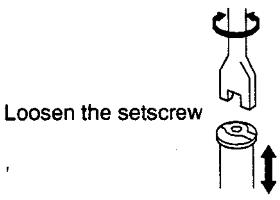


Figure 4-32.

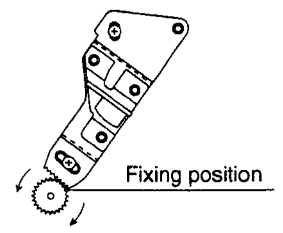


Figure 4-33.

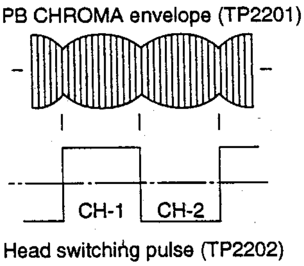


Figure 4-34.

7. Adjustment of A/C head height and azimuth
   a) Connect an oscilloscope to the audio output terminal.
   b) Using the alignment tape with linear audio prerecorded signal of 1 kHz, adjust the screws Ⓑ and Ⓒ to maximize the audio output, and adjust the screw Ⓐ to eliminate wrinkles from the tape at the retain guide flange. (Refer to P20-6-f.)
      Repeatedly adjust the screws Ⓑ, Ⓒ and Ⓐ in this sequence until the audio output becomes the maximum. (1 to 3 times as ordinary)
   c) Using the alignment tape which records a linear audio signal of 6 kHz, finally adjust the screw Ⓑ until the audio output becomes the maximum.

8. Adjustment of tape drive train and X-Position
   a) Connect the oscilloscope to the test points (TP2201) for PB CHROMA envelope output. Set the synchronism of the oscilloscope to EXT.
      The PB CHROMA signal is to be triggered by the head switching pulse (TP2202).
   b) Play back the tape drive train alignment tape.
   c) Push the (+) or (-) button to change the envelope waveform from MAX to MIN, and MIN to MAX.
      Adjust the guide roller's height on the supply and take-up sides with an adjusting screw driver, to obtain an envelope waveform that is as flat as possible.
   d) If the tape is above or below the helical lead, the PB CHROMA waveform will take the shape shown in Figure 4-35.
   e) Adjust for maximum flatness of the envelope as the step 6, e) in page 20.

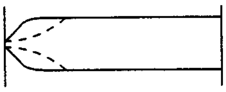
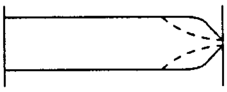
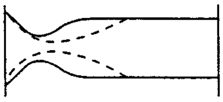
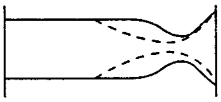
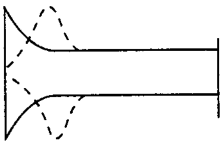
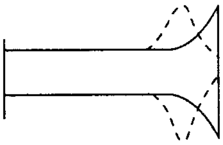
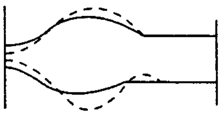
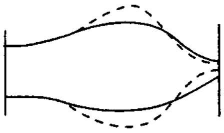
	When the tape is above the helical lead.		When the tape is below the helical lead.	
	Supply side	Take-up side	Supply side	Take-up side
				
				
Adjustment	Supply side guide roller rotated in clockwise direction (lowers guide roller) to flatten envelope.	Take-up side guide roller rotated in clockwise direction (lowers guide roller) to flatten envelope.	Supply side guide roller rotated in counterclockwise direction (raises guide roller) to make the tape float above the helical lead. The supply side guide roller is then rotated in the clockwise direction to flatten the envelope.	Take-up side guide roller rotated in counterclockwise direction (raises guide roller) to make the tape float above the helical lead. The take-up side guide roller is then rotated in the clockwise direction to flatten the envelope.

Figure 4-35.

f) Push the (+) or (-) tracking button to check that a flat response is obtained on the envelope waveform.

g) Secure the guide roller by tightening the guide roller setscrew in the unloading mode.

h) Play back the tape drive train alignment tape to check that the envelope waveform does not change.

9. Adjustment of A/C head X-position.

a) In the X value adjustment mode (see the Electrical Adjustment), make a short-circuit between TP5005 and TP5006, both located at the center on your side on the main PWB, to center the tracking.

b) Move the A/C head arm with an adjusting gear driver, and adjust the A/C head position for maximum head switching pulse hi side envelope. Finally tighten the screws ① and ②. (First tighten the screw ①, and next the screw ②.) (Figure 4-23①②)
(Reference: Final tightening torque: 0.6 N.m as preferable.)

c) Adjust the playback switching point.

d) Check the flatness of the envelope waveform and sound by playing back a recorded tape.

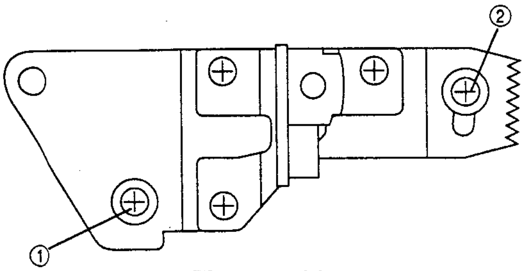


Figure 4-36.

REPLACEMENT OF THE CAPSTAN D.D. (DIRECT DRIVE) MOTOR

- **Remove the cassette housing control assembly.**

- **Removal (Follow the order of indicated numbers.)**

1. Disconnect from the board-to-board connector on the main PWB.
2. Remove the drive belt ①.
3. Remove the screws ②.

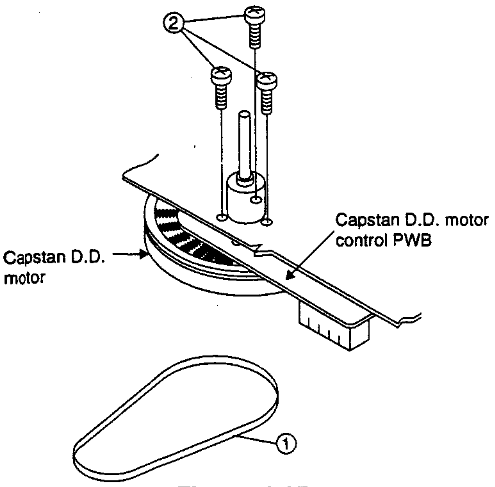


Figure 4-37.

- **Reassembly**

1. Mount the capstan motor on the mechanism chassis making sure not to allow the capstan shaft to hit the mechanism chassis, and attach it with the three screws.
2. Attach the reel belt. Reconnect to the board-to board connector on the main PWB.

Notes:

1. After installing the capstan D.D. motor, be sure to rotate the capstan D.D. motor and chack the movement.
2. Check the servo circuit.

REPLACEMENT OF DRUM D.D. MOTOR

1. Put the unit in the cassette eject position.
2. Unplug the power cord.

- **Removal (Reverse the order in reassembly.)**

1. Disconnect the FFC cable ①.
2. Unscrew the D.D. stator assembly fixing screws ②.
3. Take out the D.D. stator assembly ③.
4. Unscrew the D.D. rotor assembly fixing screws ④.
5. Take out the D.D. rotor assembly ⑤.

Notes:

1. In removing the D.D. stator assembly, part of the drum earth spring pops out of the pre-load collar.
   Be careful not to lose it.
2. Secure the D.D. rotor assembly so that the installation positioning holes in the D.D. rotor assembly and upper drum assembly match.
   (Match the upper drum's notch with the rotor's hole.)
3. Be careful not to damage the upper drum or the video head.
4. Be sure that the hall device and the D.D. stator assembly are not damaged by the D.D. rotor assembly or other parts.
5. After installation, adjust the playback switching point.

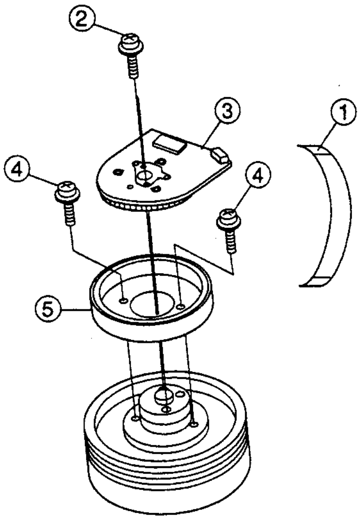


Figure 4-38.

ASSEMBLE THE MECHANISM'S PARTS REQUIRING THE PHASE MATCHING IN THE STEPS BELOW.

1. **Assembling the pinch roller assembly, reverse guide assembly and the pinch drive cam (on the front of the mechanism chassis).**
2. **Mounting the shifter (on the back of the mechanism chassis).**
3. **Mounting the master cam (on the back of the mechanism chassis).**
4. **Mounting the connection gear, slow brake and loading motor assemblies (on the back of the mechanism chassis).**

1. Assembling the pinch roller assembly, reverse guide assembly and the pinch drive cam (on the front of the mechanism chassis).

Place the following parts in position in numerical order.

(1)Reverse drive lever ①
(2)Reverse guide spring ②
(3)Reverse guide lever ass'y ③
(4)R/G adjusting nut ④
(5)Pinch drive cam ⑤
(6)Pinch roller ass'y ⑥
(7)Open lever ⑦

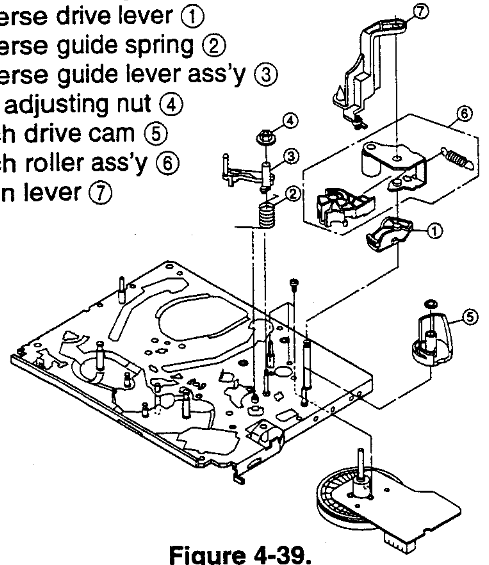
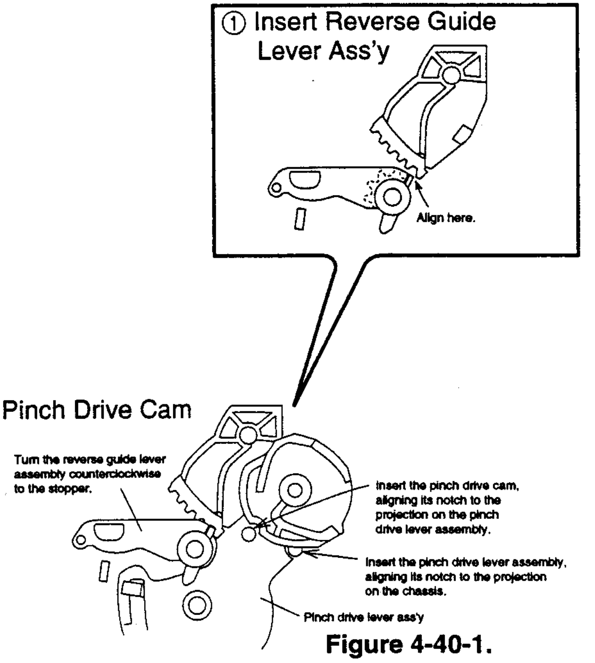


Figure 4-39.


① Insert Reverse Guide Lever Ass'y

② Insert Pinch Drive Cam

Turn the reverse guide lever assembly counterclockwise to the stopper.

Insert the pinch drive cam, aligning its notch to the projection on the pinch drive lever assembly.

Insert the pinch drive lever assembly, aligning its notch to the projection on the chassis.

Figure 4-40-1.

③ Insert Pinch Roller/Pinch Double Action Lever Ass'y.

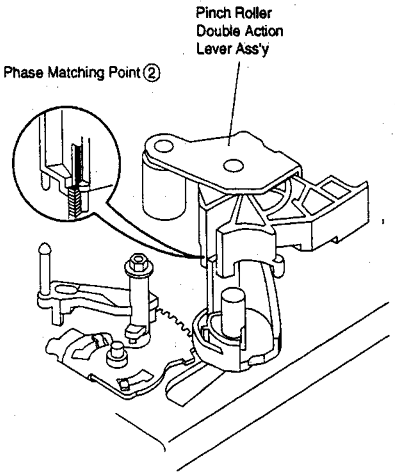


Figure 4-40-2.

④ Insert Open Lever.

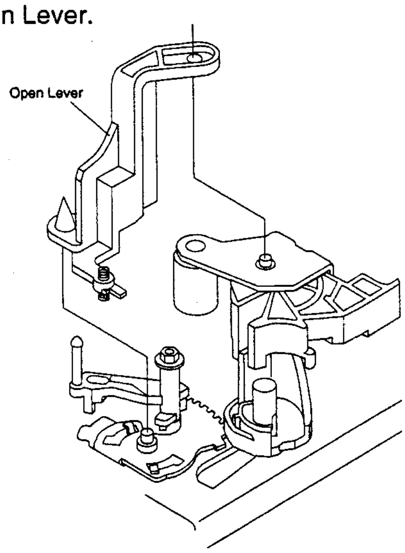
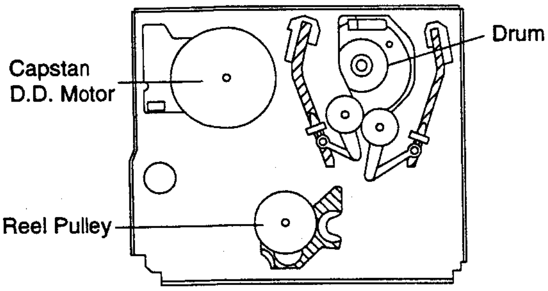


Figure 4-40-3.

2. Mounting the shifter (on the back of the mechanism chassis).


Capstan
D.D. Motor
Drum
Reel Pulley

(Bottom Side of mechanism chassis)

Figure 4-41.

1. Make sure that the loading gear is at the Phase-Matching point ① as shown below.
2. Place the shifter in position, keeping in mind the 5 insertion points and the three release points.
3. For the phase matching at the insertion point ①, see the Phase-Matching point ② as shown below.
4. Finally fix the shifter with two washers located on insert points ① and ④.

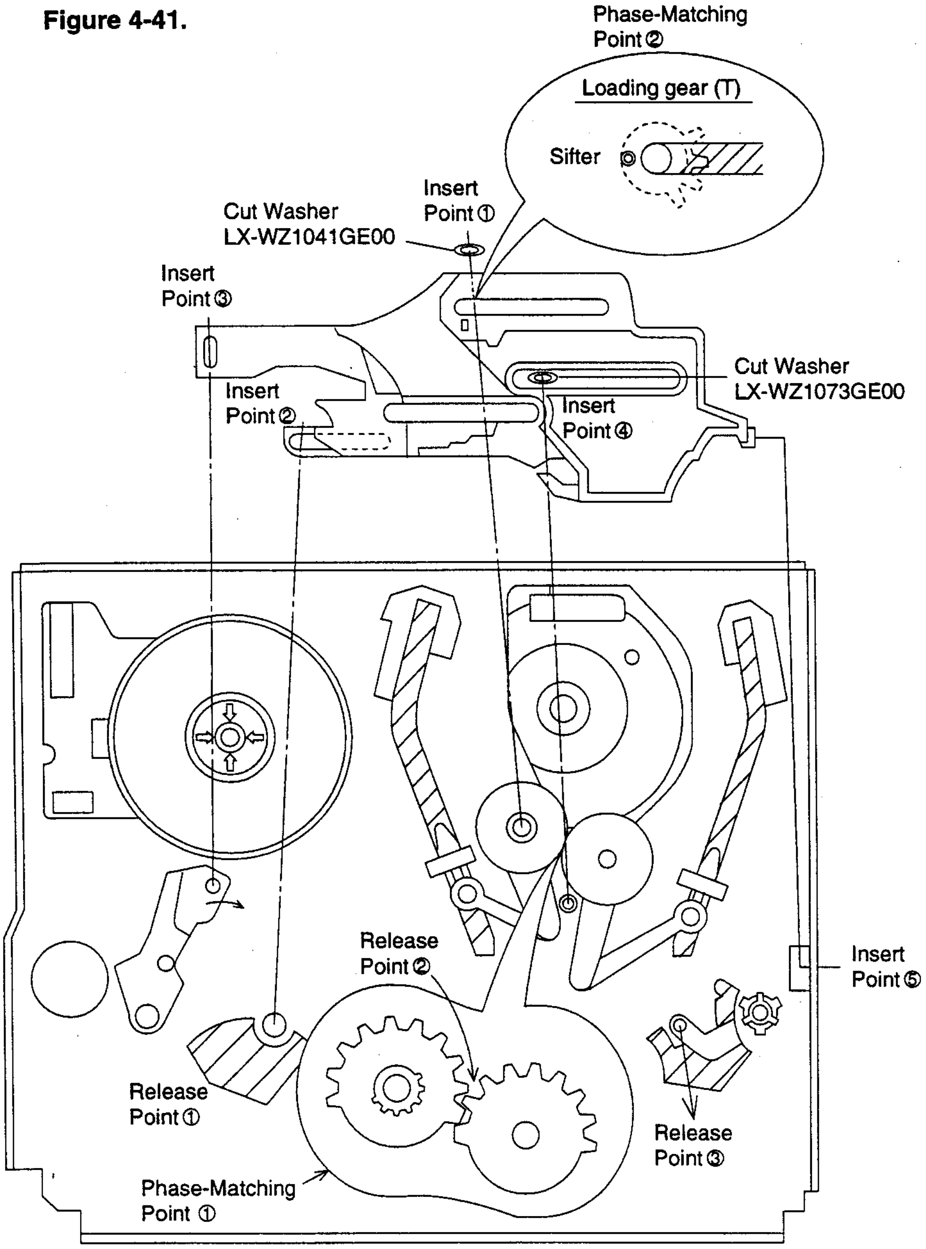
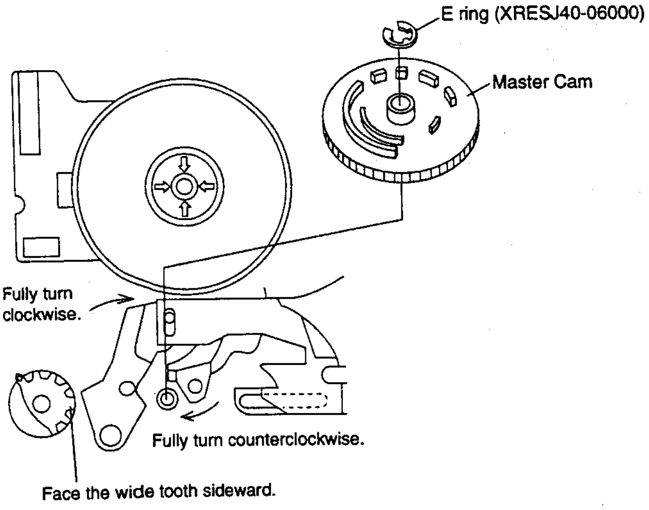

Phase-Matching
Point ②
Loading gear (T)
Sifter
Insert
Point ①
Cut Washer
LX-WZ1041GE00
Insert
Point ③
Insert
Point ②
Cut Washer
LX-WZ1073GE00
Insert
Point ④
Release
Point ②
Insert
Point ⑤
Release
Point ①
Release
Point ③
Phase-Matching
Point ①

Figure 4-42.

3. Mounting the master cam (on the back of the mechanism chassis).

(1) Make sure beforehand that the shifter is at the point as shown below.

(2) Place the master cam in the position as shown below.


E ring (XRESJ40-06000)
Master Cam
Fully turn clockwise.
Fully turn counterclockwise.
Face the wide tooth sideward.

Note:

See the figure below for the phase matching between the master cam and the cassette control drive gear.

(3) Finally fix the master cam with E ring.

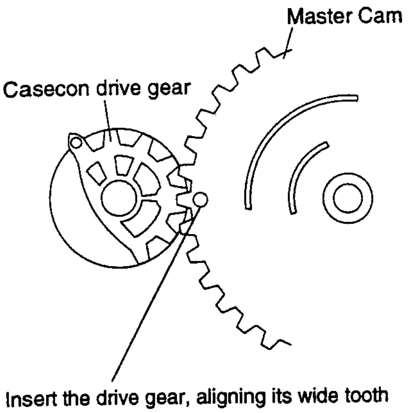

Master Cam
Casecon drive gear
Insert the drive gear, aligning its wide tooth
to the hole on the master cam.

Figure 4-43.

REPLACEMENT OF LOADING MOTOR

- **Removal**

Remove 2 screws.

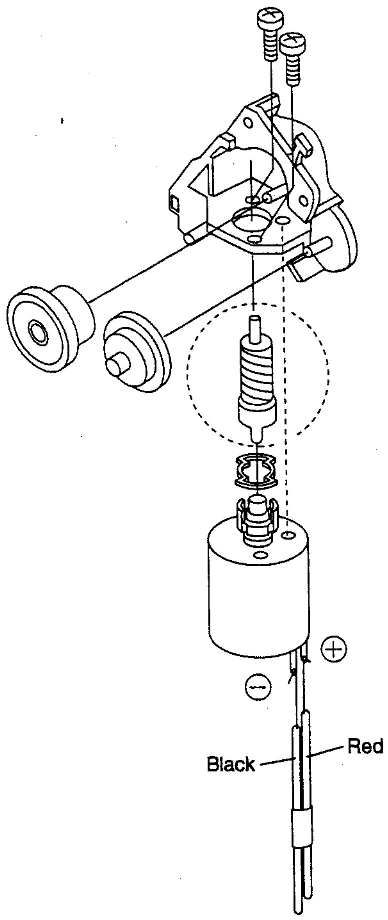


Figure 4-44.

- **Replacement**

1 Take out the old loading motor. Place a replacement loading motor as shown above (figure 4-44.).

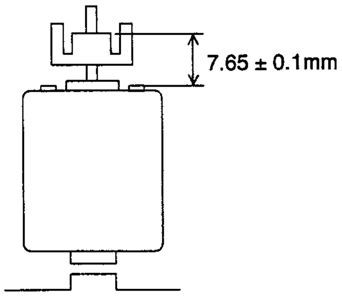


Figure 4-45.

Press-fit the loading motor pulley with a force of less than 98N (10 kgf). Be sure that the pulley is 7.65 ± 0.1 mm away from the motor.

ASSEMBLY OF CASSETTE HOUSING

1 Framer ass'y

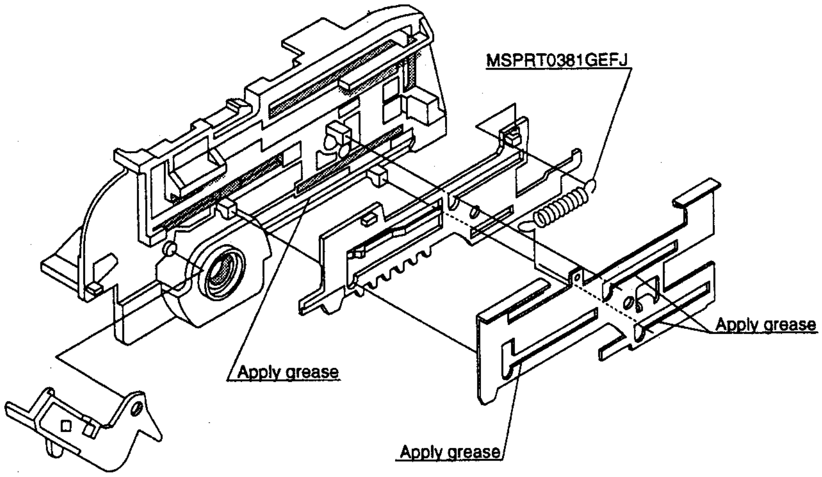

MSPRT0381GEFJ
Apply grease
Apply grease
Apply grease

Figure 4-46.

2 Synchro Gear, Drive Gear L and Drive Gear R

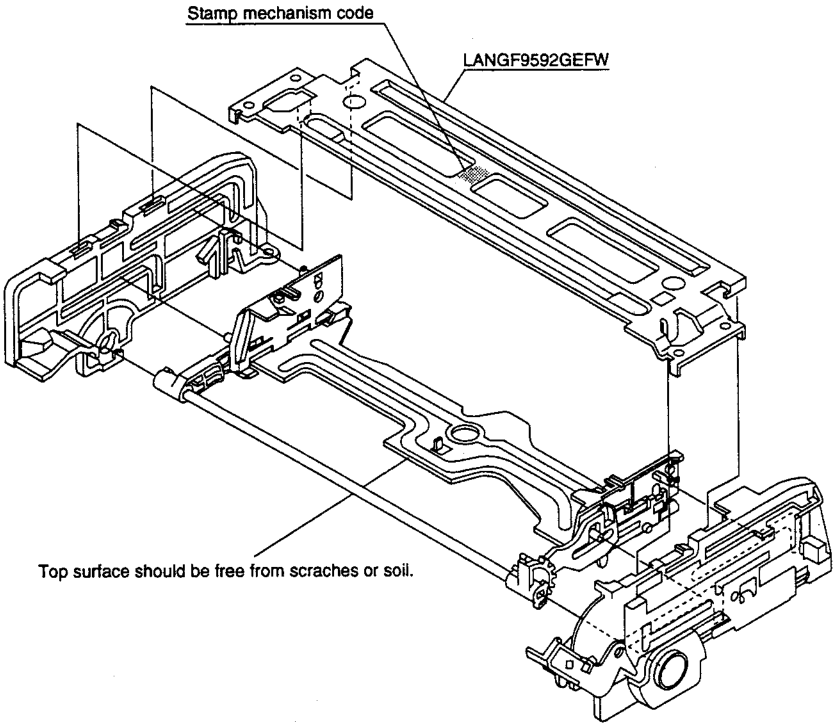

Stamp mechanism code
LANGF9592GEFW
Top surface should be free from scraches or soil.

Figure 4-47.

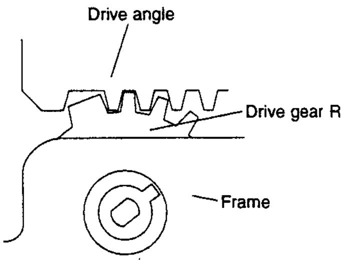

Drive angle
Drive gear R
Frame

Figure 4-48.

5. ELECTRICAL ADJUSTMENT

Notes:

- Before the adjustment:
  Electrical adjustments discussed here are often required after replacement of electronic components and mechanical parts such as video heads.
  Check that the mechanism and all electric components are in good working condition prior to the adjustments, otherwise adjustments can not be completed.

- Instruments required:

◎ Colour TV monitor	◎ Dual-trace oscilloscope
◎ Audio signal generator	◎ AC milli-voltmeter
◎ DC voltmeter	◎ Frequency counter
◎ Blank video cassette tape	◎ Alignment tape (VROCPSV)
◎ Screwdriver for adjustment	◎ Alignment tape (VROATSV)
◎ Colour bar signal generator	◎ Alignment tape (VROCBFFS)

※ Servicing precations
When the IC703 (E²PROM) has been replaced, make the following reprogramming. Depending on models, the IC703 (E²PROM) has been factry-adjusted for it's memory function.
It's therefore necessary to reprogram the memory function for the model in question.
Note that the servo circuit requires readjustments for the head switching point, slow and still modes.

- **Location of controls and test points**

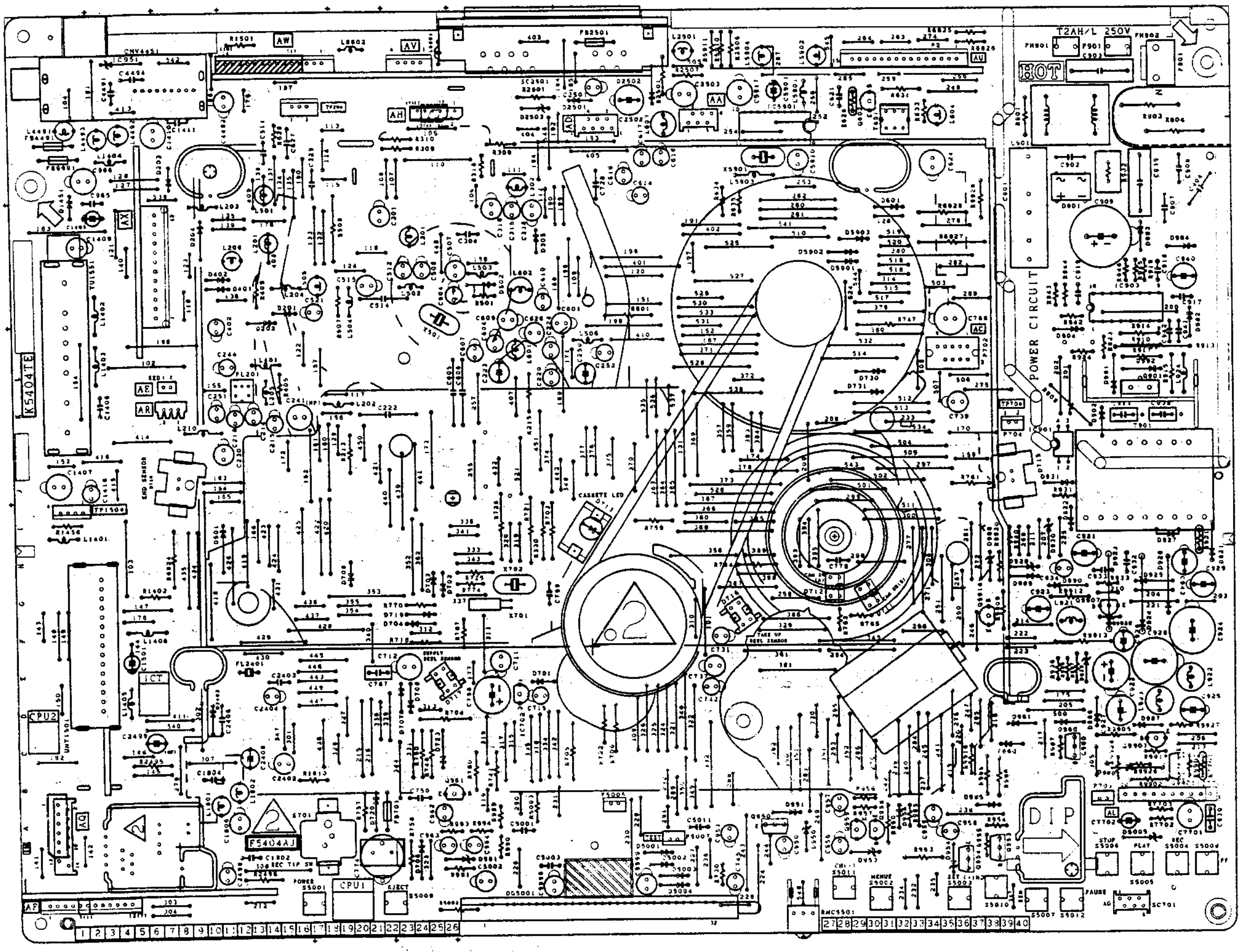

AW
AV
AH
AJ
AA
AX
AE
AR
AQ
AF
AL
HOT
T2AH/L 250V
POWER CIRCUIT
DIP
K5404TE
F5404AJ
CPU1
CPU2
ICT
CASSETTE LED
END SENSOR
TAKE UP REEL SENSOR
SUPPLY REEL SENSOR
POWER
EJECT
PLAY
STOP
REC
PAUSE
MENU
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
27 28 29 30 31 32 33 34 35 36 37 38 39 40

Figure 5-1.

SERVO CIRCUIT ADJUSTMENT

ADJUSTMENT OF HEAD SWITCHING POINT

Measuring instrument	Dual-trace oscilloscope Colour TV monitor
Mode	Playback
Cassette	Alignment tape (VROCPSV)
Test point	TP2202 (H.SW.P.) to CH-1, VIDEO OUT jack to CH-2 (CH-1 trigger slope switch at (+), Internal trigger at CH-1 side.)
Specification	6.5 ± 0.5H (lines)

1. Remove the front panel and play the alignment tape. (VROCPSV)
   (Playback picture on the monitor screen.)
2. Make for a moment short-circuit between TP5001 and TP5002, both located at the front side on the main PWB.
   Be sure that all the fluorescent display tubes light up into the TEST mode.
   (See Note below)
3. Press the PLAY button.
   Be sure the "PLAY" appears in the fluorescent display tubes flashing (about 1Hz) into the auto PG adjustment operating.
   Note:
   When the manual PG adjustment, observe the waveform with an oscilloscope and make adjustment FF or REW button so that the specification.
4. Stop the "PLAY" appears in the flashing of fluorescent display tubes at adjusted.
5. Press the STOP button in the return to normal mode.
6. Make this checking of waveform on the oscilloscope screen be as shown in Figure 5-2. just after the head switching point have been adjusted.

Note:

① Set-up of TEST mode.
When the adjustment of HEAD SWITCHING POINT, AUTO TRACKING function is invalid.

② When the cassette housing control ass'y is removed, set-up of mechanism operating mode.

1) Replug the AC power cord it a few minutes later.
2) Make a short-circuit between TP5005 and TP5006, both located at the front side on the main PWB with a 22 ohm resistor, to center the tracking.
3) AC power cord is plugged in.
4) You can mechanism operatig mode, Replug the AC power cord a few minutes later.

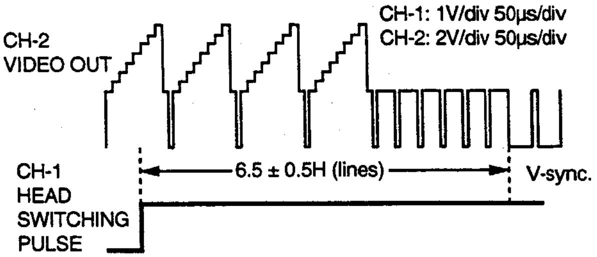


Figure 5-2.

ADJUSTMENT OF SP/LP SLOW TRACKING PRESET

Measuring instrument	Colour TV monitor
Mode	Playback
Cassette	Self-recorded tape (SP/LP mode) (See Note below)
Control	Tracking control buttons (+) or (–)
Specification	Minimized noise on monitor screen

1. Have the unit to receive a good TV broadcast or feed a video signal to the VIDEO IN jack. (See note ② below)
2. Set the tape speed in SP mode by using the remote control and record the signal on tape.
3. Rewind and play the tape where signal was recorded in above step.
4. Press the SLOW button on the remote control, and playback the recorded portion in the slow mode.
5. Make for a moment short-ciucuit between TP5001 and TP5002, both located at the front side on the main PWB.
   Be sure that all the fluorescent display tubes light up into the TEST mode.
6. Look at the monitor screen and adjust the (+) or (–) TRACKING buttons so that the there is noise disappears from the screen.
7. Press the STOP button to return to normal mode.
8. Play the tape a few seconds then press the SLOW button again and make sure there is no noise in the screen.
   (For the LP mode put adjustment at the same adjustment way as SP mode.)

Notes:

① Self-recorded tape means a cassette whose program was recorded by the unit being adjusted.

② The TV program will not be recorded if RCA or 21pin plugs are pluged in to the AUDIO/VIDEO input terminals.

ADJUSTMENT OF FV(False Vertical Sync) OF STILL PICTURE

Measuring instrument	Colour TV monitor
Mode	Playback still
Cassette	Self-recorded tape (SP mode) (See Note below ②)
Control	Tracking control buttons (+) or (–)
Specification	No vertical jitter of picture

1. Play a cassette which was recorded by the unit in SP mode.
2. Press the PAUSE/STILL button to freeze the picture.
3. Look at the monitor screen and adjust (+) or (–) TRACKING buttons so that the vertical jitter of the picture to be minimized.
4. Play and freeze the self-recorded tape in SP mode and make sure vertical jitter of the picture is not noticeable.
   (For the LP mode put adjustment at the same adjustment way as SP mode.)

Note:

① The FV goes back to the it's initial state when the unit is put into the system controller reset mode due to power failure, etc.
In this case, preset the FV once again.

② Self-recorded tape is a cassette whose program was recorded by the unit being adjusted.

Y/C CIRCUIT ADJUSTMENT

CHECKING OF VIDEO E-E LEVEL

Measuring instrument	Oscilloscope
Mode	E-E or Record
Input signal	EIA colour bar (1.0Vp-p)
Test point	VIDEO OUT jack
Specification	0.95 ± 0.15Vp-p

1. Connect a 75 ohm terminating resistor to the VIDEO OUT jack and connect an oscilloscope across this terminating resistor.
   (See Note below.)
2. Feed a colour bar signal to the VIDEO IN jack.
3. Make sure that the E-E signal amplitude is 1.0Vp-p as shown in Figure 5-3.

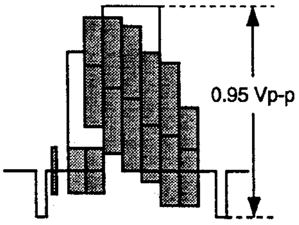


Figure 5-3.

Notes:

If the 75 ohm terminating resistor is missing, the signal amplitude will be doubled.

CHECKING OF WHITE CLIP LEVEL

Measuring instrument	Oscilloscope
Mode	E-E or Record
Input signal	EIA colour bar (1.0Vp-p)
Test point	Pin(78) of IC201, GND
Specification	190 ± 5% (See note below)

1. Connect an oscilloscope to pin (78) of IC201 and GND.
2. Feed the colour bar signal to the VIDEO IN jack and set the unit in E-E or recording mode.
3. Make sure that the overshoot of the video signal is clipped at 190% as shown in Figure 5-4.

Note:

From sync tip to white peak, the level is 100%.
The white clip level is 90% above the white level.

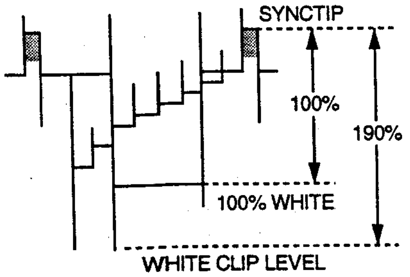


Figure 5-4.

CHECKING OF RECORD LEVEL

Measuring instrument	Dual-trace oscilloscope
Mode	Record mode
Input signal	EIA colour bar (1.0Vp-p)
Test point	Chroma (Red) R305 terminal lead at C329 side (Sig.) ~ GND Sync tip R304 terminal lead at C330 side (Sig.) ~ GND
Specification	Chroma (Red): 400~600mVp-p Sync tip: 150~220mVp-p

1. Feed the colour bar signal to the VIDEO IN jack and set the unit in recording mode.
2. Connect a dual -trace oscilloscope to each test point shown in table.
3. Make sure so that the amplitude of the chroma (Red) portion and the sync tip portion are specified as shown in Figure 5-5.

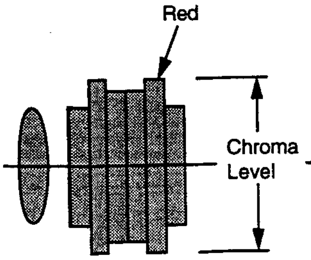


Figure 5-5 (a).

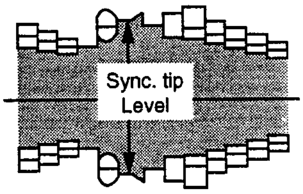


Figure 5-5 (b).

CHECKING OF PLAYBACK LEVEL

Measuring instrument	Oscilloscope
Mode	Record/Playback
Input signal	EIA colour bar (1.0Vp-p)
Test point	VIDEO OUT jack
Specification	0.95 ± 0.15Vp-p

1. Be sure that E-E level has been correctly specificed.
2. Connect a 75 ohm terminating resistor to the VIDEO OUT jack and connect an oscilloscope across this terminating resistor.
   (See Note below ①.)
3. Feed a colour bar signal to the VIDEO IN jack and set the unit in recording mode.
4. Play the colour bar portion of the recorded tape.
5. Make sure that the output signal amplitude is 1.0Vp-p as shown in Figure 5-6.

Note:

① If the 75 ohm terminating resistor is missing, the signal amplitude will be doubled.

② Set the S.PICTURE switch turn off.

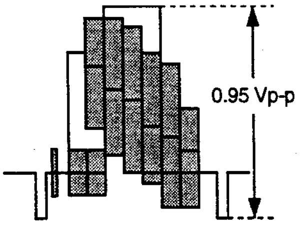


Figure 5-6.

CHECKING OF S.PICTURE

Press the S.PICTURE button on the VCR.
"S.PICTURE ON (or OFF)" will appear on the TV screen for a few seconds.
Each time the button is pressed, the mode switches between ON and OFF.
ON:
Normally leave the mode set to ON.
This high picture quality function will create a clearer image during playback.
OFF"
Set to OFF when playing back a tape on the VCR while editing or when strong noise appears on the screen.
Set to OFF when using the VCR as an editing sourse.

Notes:

① This function only operates during playback. It will not operate when recording or watching a TV programme with the VCR tuner.

② This function can not be set to ON/OFF with the MENU screen displayed.

AUDIO CIRCUIT ADJUSTMENT.

IMPORTANT NOTES ON Hi-Fi SECTION.

- **Location of controls and test points**

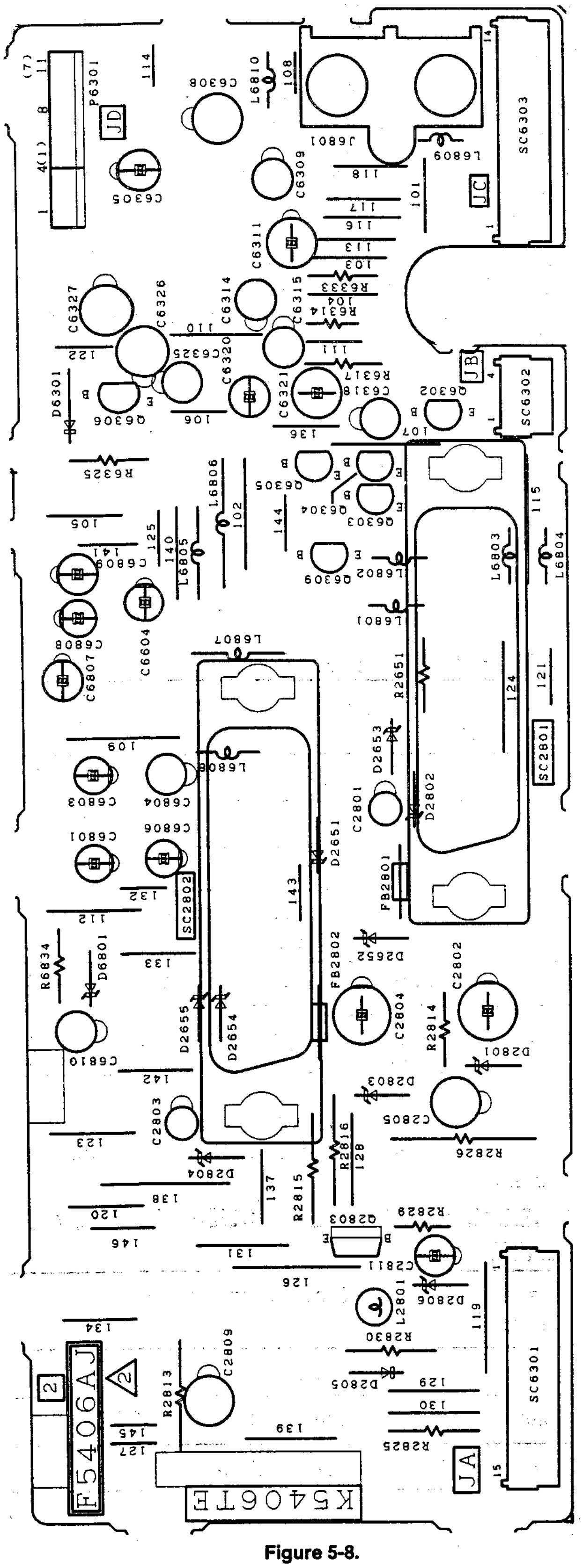

JD
JC
JB
JA
P6301
SC6303
SC6302
SC2801
SC2802
SC6301
L6810
C6309
C6311
C6314
C6315
C6326
C6327
C6320
C6321
D6301
L6806
L6805
L6803
L6804
C6604
C6807
R2651
D2653
C2801
D2802
D2651
FB2801
FB2802
C2802
C2804
R2814
D2655
D2654
C2803
R2816
R2815
L2801
C2809
R2813
R6834
D6801
F5406AJ
2
2
K5406TE

Figure 5-8.

1. SERVICING OF THE Hi-Fi block.
   1) "RECORD MODE".
      Under this condition record a stereo broadcast on tape and adjust control.
   2) "PLAYBACK MODE".
      Under this condition play a Hi-Fi tape and adjust control.
      (You can select the audio output channels in the playback mode by pressing the AUDIO OUT button on the remoto control or the SET UP button on the VCR.
      Set the desired Audio Output mode by pressing the (+) or (–) button.
      The Audio output mode is controlled by the AUDIO OUT button on the remote control. The VCR in normally set to the Hi-Fi mode, with L and R displaied on the VCR display, and normal stereo sound output. Press the AUDIO OUT button and only the Hi-Fi Left channel audio is heard from both the Right and Left speakers. Press the AUDIO OUT button again and only the Hi-Fi Right channel audio is heard from both the Right and Left speakers.
      Press again and only the mono linear track is selected. The above sequence is then repeated each time the AUDIO OUT button is pressed.)

CHECKING OF E-E LEVEL

Measuring instrument	AC milli-voltmeter
Mode	E-E or REC mode
Input signal	1kHz, –3.8dBs (at 21pin jack)
Test point	AUDIO OUT jack
Specification	–5 ± 3dBs (at RCA jack) –3.8 ± 3dBs (at 21pin jack)

1. Feed the audio signal shown in table to the left channel of the AUDIO IN jack.
2. Connect an AC milli-voltmeter to the left channel of the AUDIO OUT jack and right channel of the AUDIO OUT jack.
3. Make sure that the milli-voltmeter reads special value. (Check the level is less than 2dBs both Left and Right channels.)

CHECKING OF LINEAR AUDIO PLAYBACK LEVEL

Measuring instrument	AC milli-voltmeter
Mode	Playback
Cassette	Alignment tape.(VROCPZC)
Test point	AUDIO OUT jack
Specification	-9^{+2dB}_{-2dB} (at RCA jack) -7.8^{+2dB}_{-2dB} (at 21pin jack)

1. Connect an AC milli-voltmeter to the AUDIO OUT jack.
2. Playback the Alignment tape (VROCPZC).
3. Make sure that the audio output level is as specified.

CHECKING OF Hi-Fi AUDIO PLAYBACK LEVEL

Measuring instrument	AC milli-voltmeter
Mode	Playback
Cassette	Alignment tape (VROCBFFS)
Test point	AUDIO OUT jack
Specification	-5 ± 2dBs (at RCA jack) -3.8 ± 2dBs (at 21pin jack)

1. Connect an AC milli-voltmeter to the AUDIO OUT jack.
2. Play the alignment tape (VROCBFFS).
3. Make sure that the AUDIO OUT level is as specified.

Note:
Check the PLAYBACK level is less than 2.0dBs both Left and Right channels.

CHECKING OF Hi-Fi/NOMAL AUDIO SELF-RECORD/PLAYBACK LEVEL

Measuring instrument	AC milli-voltmeter
Mode	Record/playback
Input signal	1kHz, –3.8dBs (at 21pin jack)
Test point	AUDIO OUT jack
Specification	-5.0 ± 3dBs (at RCA jack) -3.8 ± 3dBs (at 21pin jack)

1. Feed the audio signal shown in table to the Left channel of the AUDIO IN jack.
2. Connect an AC milli-voltmeter to the Left channel of the AUDIO OUT jack and Right channel of the AUDIO OUT jack.
3. Make sure so that the milli-voltmeter reads spcified value.

Note:
Check the PLAYBACK level is less than 2.0dBs both Left and Right channels.

CHECKING OF ERASE VOLTAGE AND OSCILLATION FREQUENCY

Measuring instrument	Oscilloscope
Mode	Record
Test point	Full erase head
Control	T651
Specification	70 ± 5kHz, 40Vp-p or greater

1. Put the unit in record mode.
2. Connect an oscilloscope across thefull erase head.
3. Make sure the erase voltage across the full erase head is approx. 40Vp-p or more and frequency is 70 ± 5kHz.

ADJUSTMENT OF RF AGC CIRCUIT (VHF-L system)

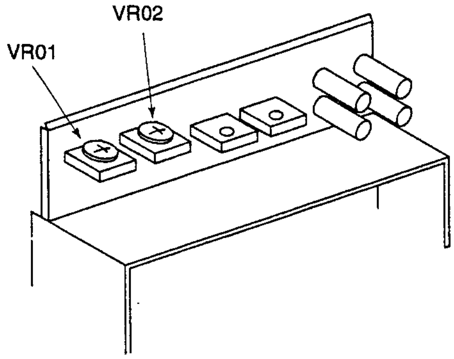
Measuring instrument	DC voltmeter and VHF signal generator
Mode	RF signal at F-C CH by VHF signal generator (Colour bar signal at 94.0% modulated.) at input field stregth: 62dBµV of antenna terminal.
Test point	TP1502 (+), TP1504 (–)
Control	VR02 AGC control (VHF-L system) (in the IF pack)
Specification	5.2 ± 0.2V

1. Receive the F-C CH signal at input field stregth:62dBµV of antenna terminal.
2. Connect a DC voltmeter to test point shown in table.
3. Adjust VR02 (AGC control at VHF-L system.) in the IF pack so that the voltage be specified.

ADJUSTMENT OF AGC CIRCUIT (VHF-H system)

Measuring instrument	DC voltmeter and VHF signal generator.
Mode	RF signal at F-6 CH by VHF signal generator (Colour bar signal at 94.0% modulated.) at input field stregth: 62dBµV of antenna terminal.
Test point	TP1502 (+), TP1504 (–)
Control	VR01 AGC control (VHF-H system) (in the IF pack)
Specification	5.04±0.2V

1. Receive the F-6 CH signal at input field stregth: 62dBµV of antenna terminal.
2. Connect a DC voltmeter to test point shown in table.
3. Adjust VR01 (AGC control at VHF-H system.) in the IF pack so that the voltage be specified.



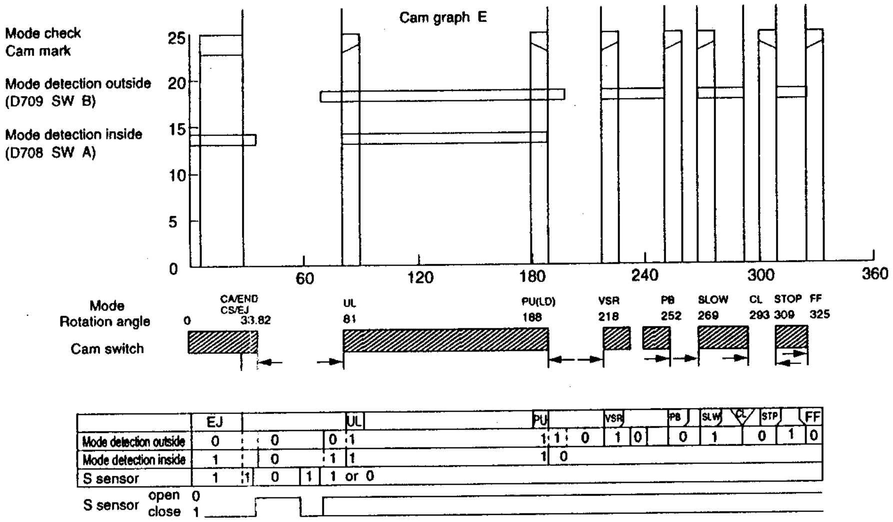
IF PACK (UNT1501)
Figure 5-9.

6. MECHANISM OPERATION FLOWCHART AND TROUBLESHOOTING GUIDE

MECHANISM OPERATION FLOWCHART

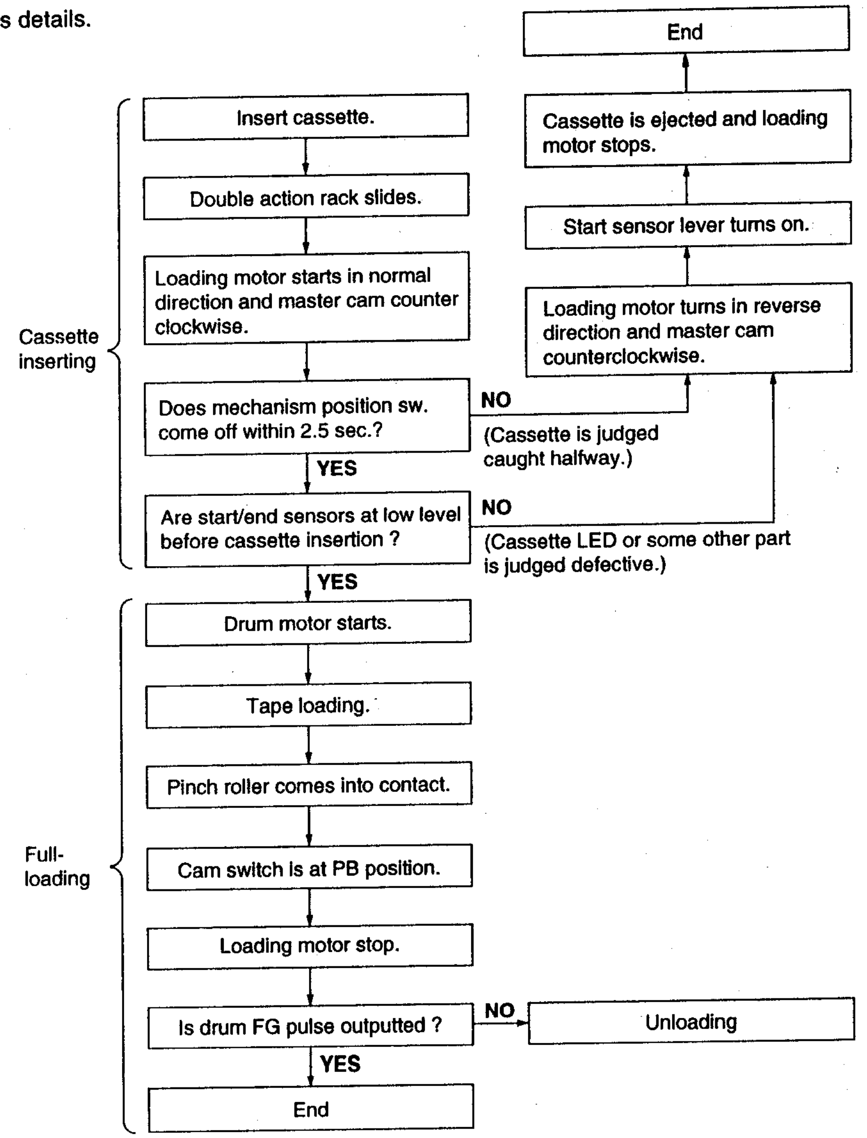
* This flowchart describes the outline of the mechanism's operation, but does not give its details.

F mechanical timing

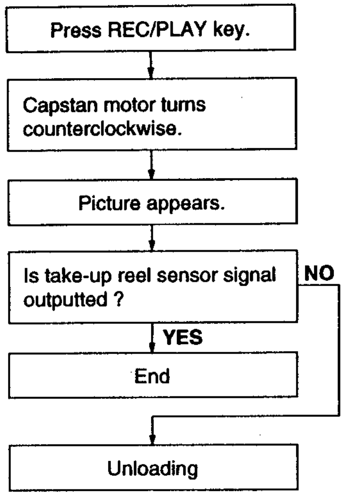


	Mode detection inside Sensor A	Mode detection outside Sensor B
CS/EJ	1	0
ULD	1	1
PU LD	1	1
VSR	0	1
PB	0	0
STILL	0	1
CL	0	0
STOP	0	0
FF	0	0

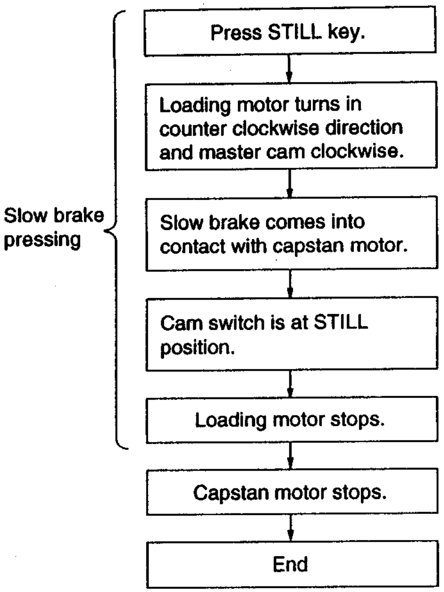
CASSETTE INSERTION → STOP


Cassette inserting
Insert cassette.
Double action rack slides.
Loading motor starts in normal direction and master cam counter clockwise.
Does mechanism position sw. come off within 2.5 sec.?
NO
(Cassette is judged caught halfway.)
YES
Are start/end sensors at low level before cassette insertion ?
NO
(Cassette LED or some other part is judged defective.)
YES
Loading motor turns in reverse direction and master cam counterclockwise.
Start sensor lever turns on.
Cassette is ejected and loading motor stops.
End
Full-loading
Drum motor starts.
Tape loading.
Pinch roller comes into contact.
Cam switch is at PB position.
Loading motor stop.
Is drum FG pulse outputted ?
NO
Unloading
YES
End

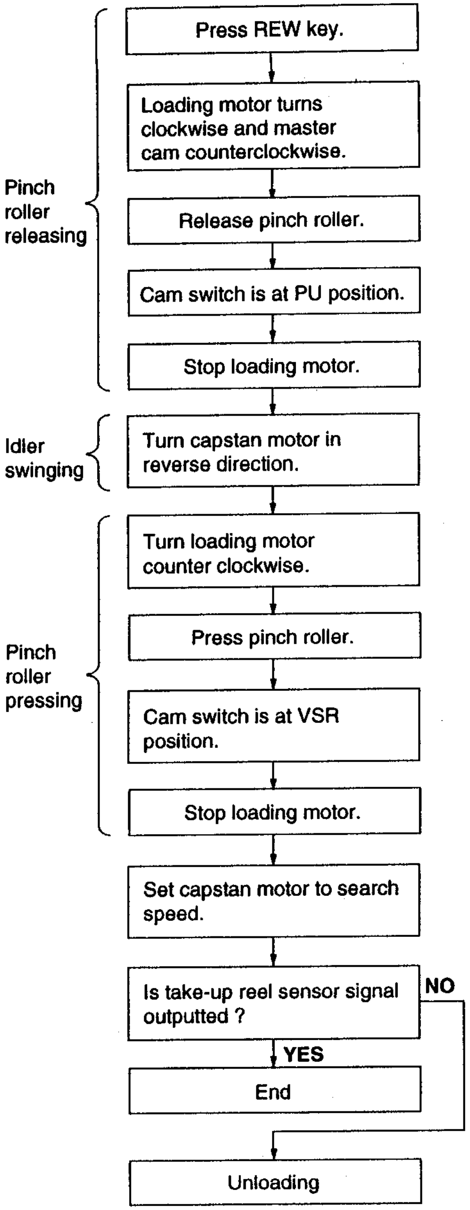
STOP → REC/PLAY


Press REC/PLAY key.
Capstan motor turns counterclockwise.
Picture appears.
Is take-up reel sensor signal outputted ?
NO
YES
End
Unloading

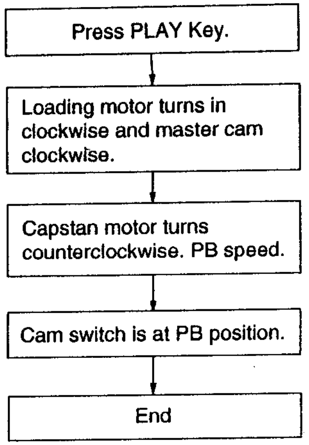
PLAY → STILL


Press STILL key.
Loading motor turns in counter clockwise direction and master cam clockwise.
Slow brake comes into contact with capstan motor.
Cam switch is at STILL position.
Loading motor stops.
Capstan motor stops.
End
Slow brake pressing

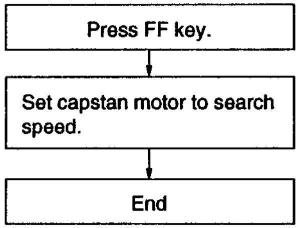
PLAY → VSR


Press REW key.
Loading motor turns clockwise and master cam counterclockwise.
Release pinch roller.
Cam switch is at PU position.
Stop loading motor.
Turn capstan motor in reverse direction.
Turn loading motor counter clockwise.
Press pinch roller.
Cam switch is at VSR position.
Stop loading motor.
Set capstan motor to search speed.
Is take-up reel sensor signal outputted ?
NO
YES
End
Unloading
Pinch roller releasing
Idler swinging
Pinch roller pressing

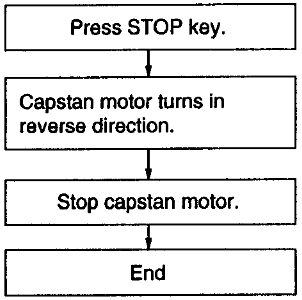
VSR → PLAY


Press PLAY Key.
Loading motor turns in clockwise and master cam clockwise.
Capstan motor turns counterclockwise. PB speed.
Cam switch is at PB position.
End

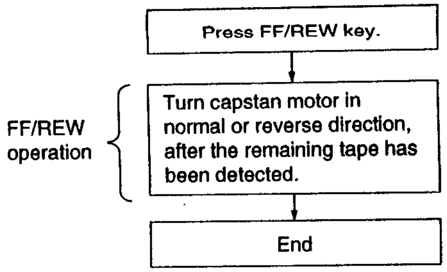
PLAY → VSF


Press FF key.
Set capstan motor to search speed.
End

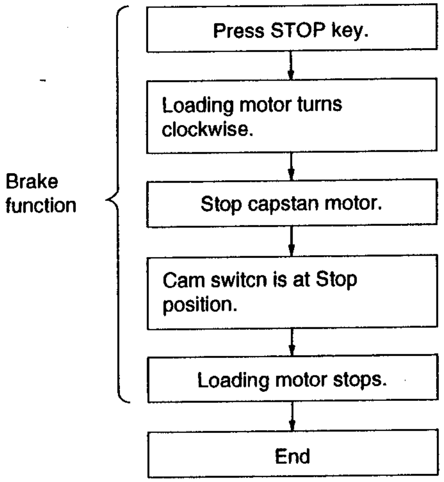
REC/PLAY → STOP


Press STOP key.
Capstan motor turns in reverse direction.
Stop capstan motor.
End

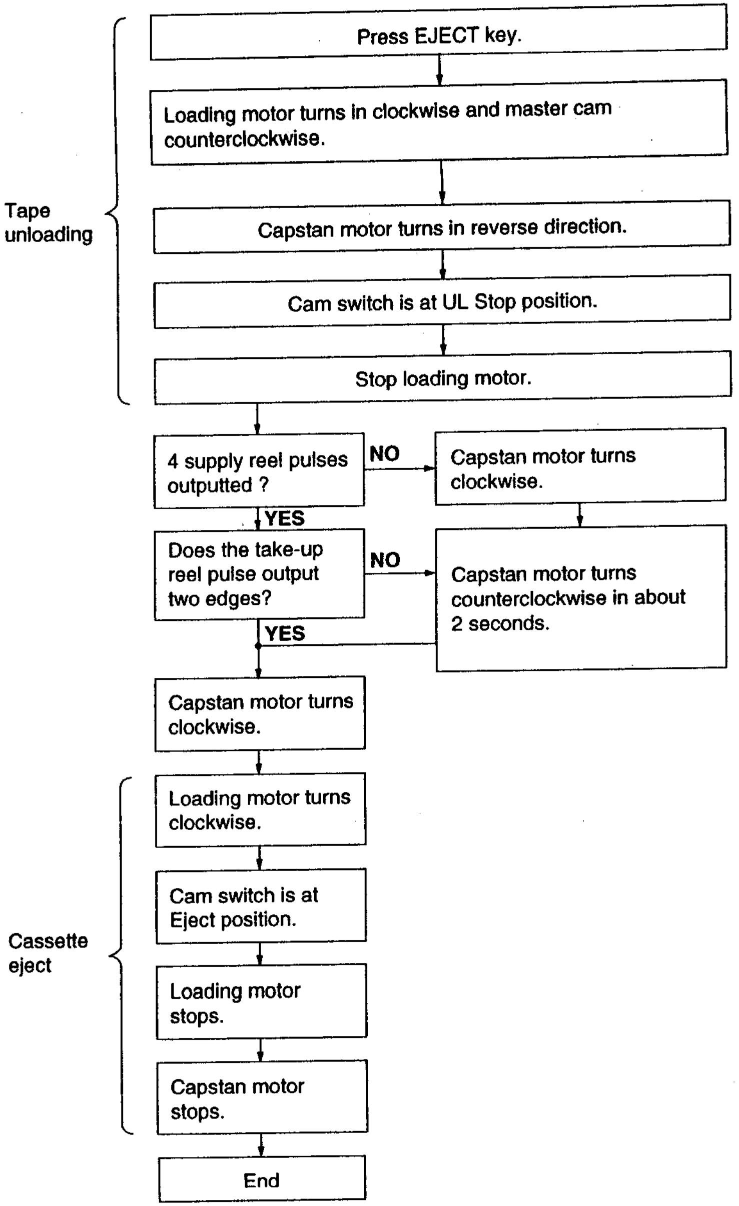
STOP → FF/REW


Press FF/REW key.
FF/REW operation
Turn capstan motor in normal or reverse direction, after the remaining tape has been detected.
End

FF/REW → STOP

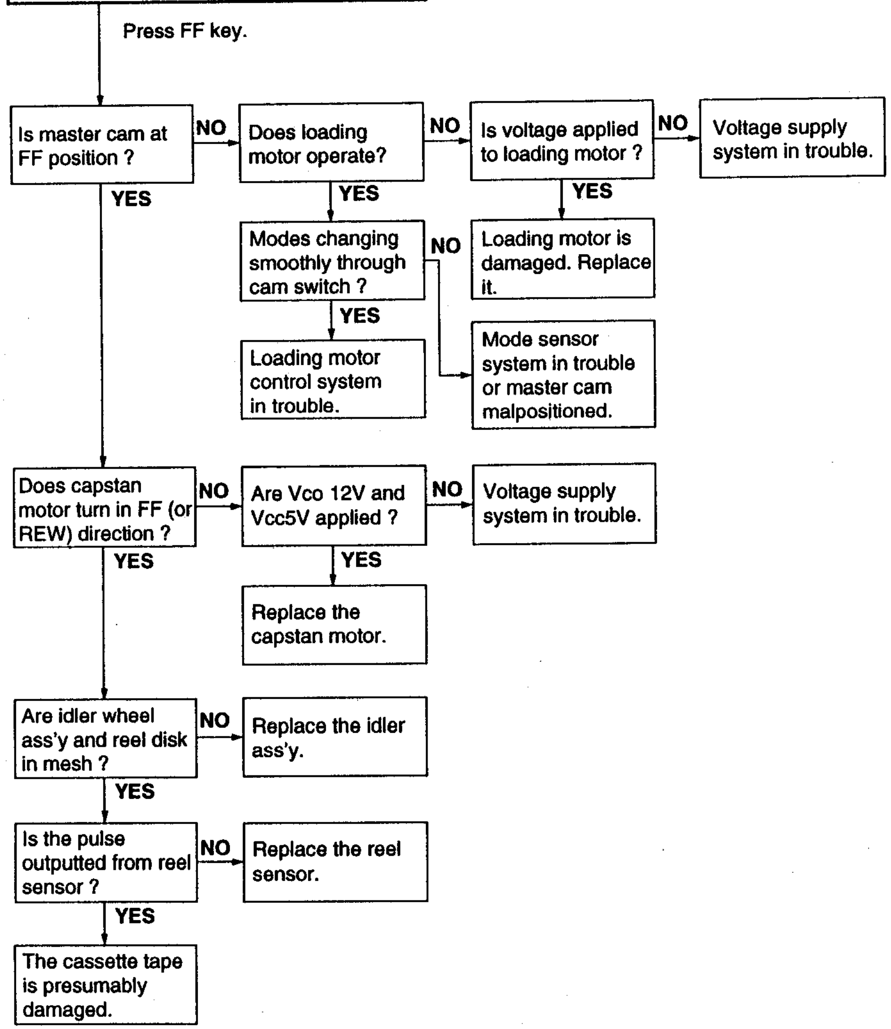

Brake function
Press STOP key.
Loading motor turns clockwise.
Stop capstan motor.
Cam switcn is at Stop position.
Loading motor stops.
End

STOP → CASSETTE EJECT

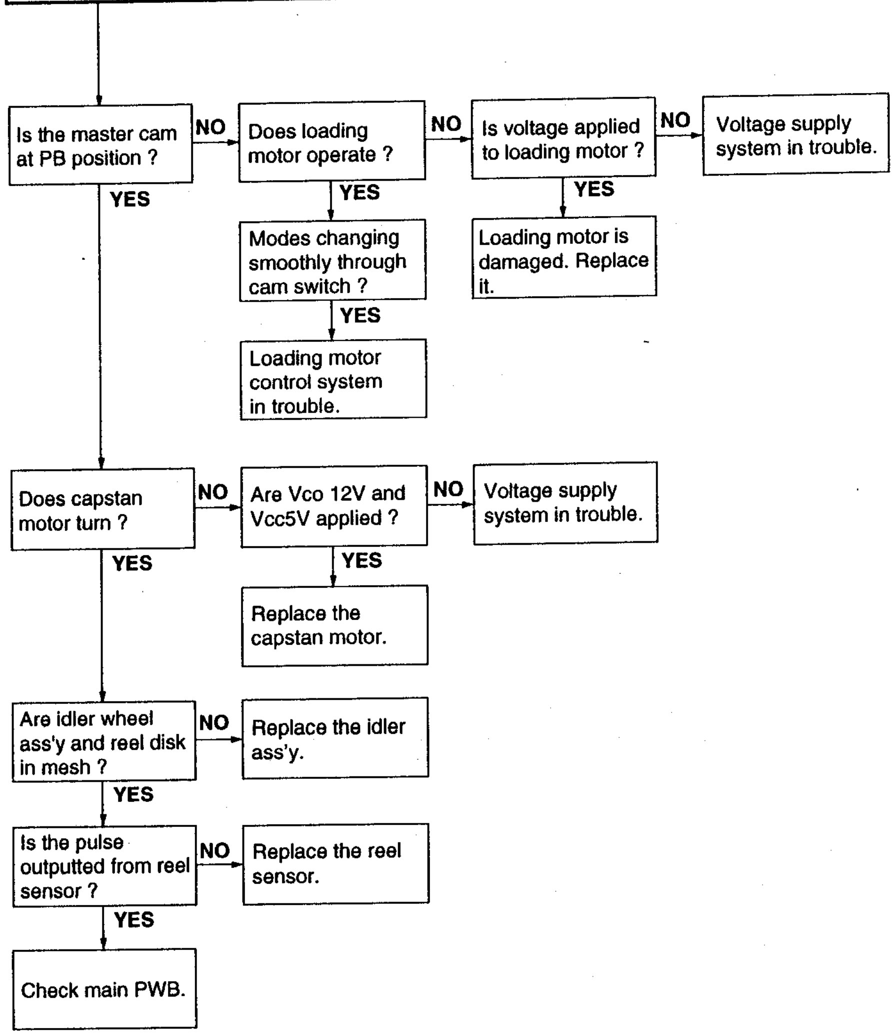

Tape unloading
Press EJECT key.
Loading motor turns in clockwise and master cam counterclockwise.
Capstan motor turns in reverse direction.
Cam switch is at UL Stop position.
Stop loading motor.
4 supply reel pulses outputted ?
NO
Capstan motor turns clockwise.
YES
Does the take-up reel pulse output two edges?
NO
Capstan motor turns counterclockwise in about 2 seconds.
YES
Capstan motor turns clockwise.
Cassette eject
Loading motor turns clockwise.
Cam switch is at Eject position.
Loading motor stops.
Capstan motor stops.
End

MECHANISM TROUBLESHOOTING

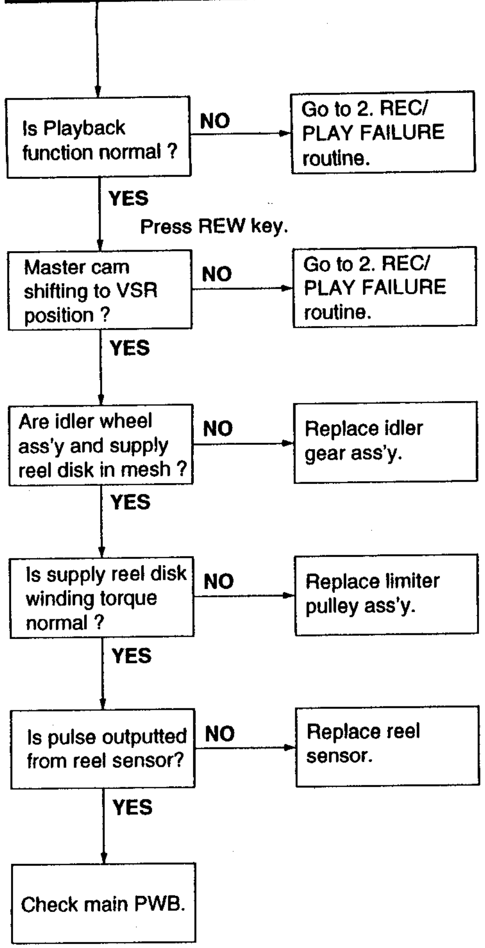
1. FF/REW FAILURE (NO TAPE WINDING)


Press FF key.
Is master cam at FF position ?
NO
Does loading motor operate?
NO
Is voltage applied to loading motor ?
NO
Voltage supply system in trouble.
YES
Loading motor is damaged. Replace it.
YES
Modes changing smoothly through cam switch ?
NO
Mode sensor system in trouble or master cam malpositioned.
YES
Loading motor control system in trouble.
YES
Does capstan motor turn in FF (or REW) direction ?
NO
Are Vco 12V and Vcc5V applied ?
NO
Voltage supply system in trouble.
YES
Replace the capstan motor.
YES
Are idler wheel ass'y and reel disk in mesh ?
NO
Replace the idler ass'y.
YES
Is the pulse outputted from reel sensor ?
NO
Replace the reel sensor.
YES
The cassette tape is presumably damaged.

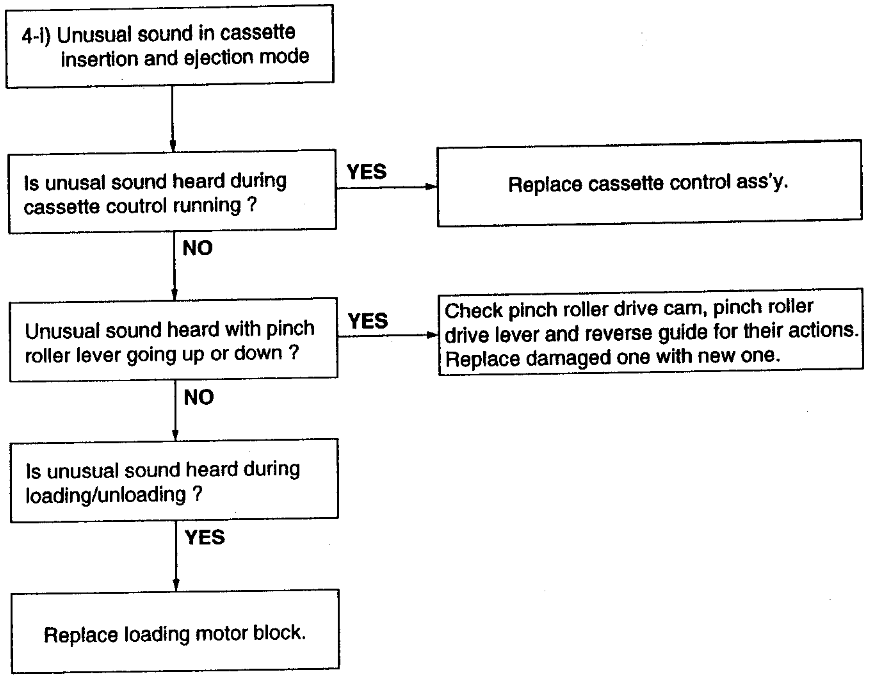
2. REC/PLAY FAILURE (MODE RELEASE)

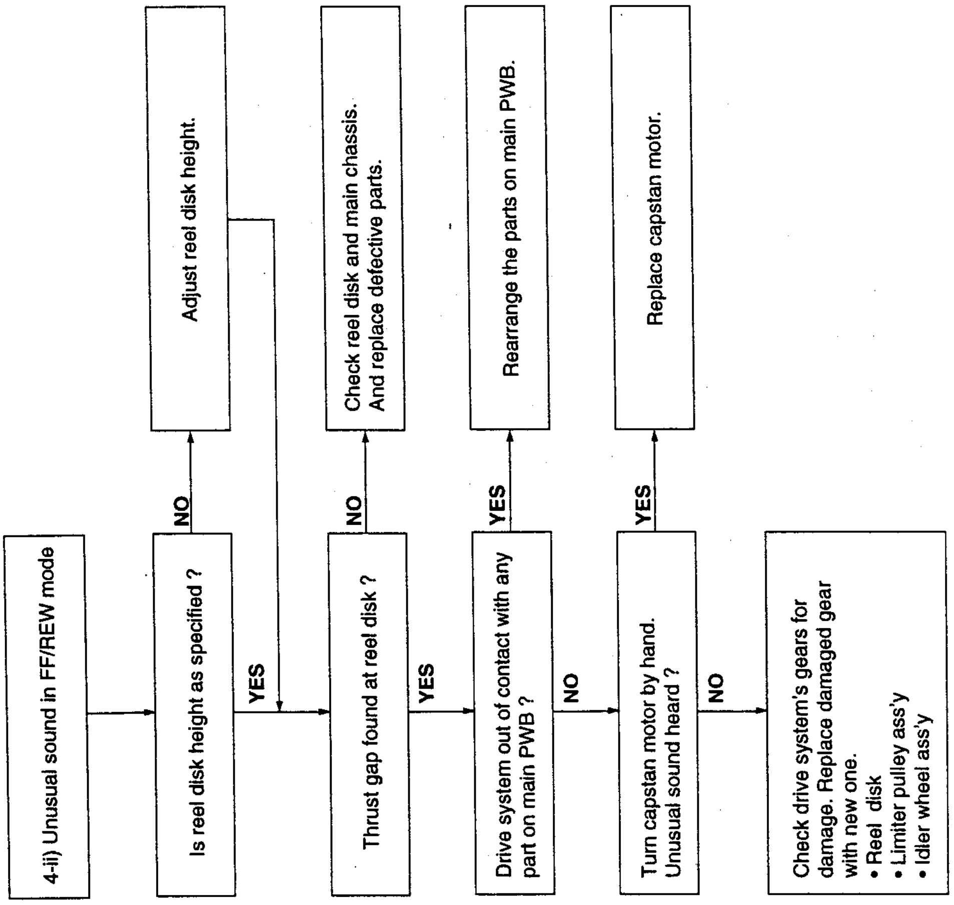

Is the master cam at PB position ?
NO
Does loading motor operate ?
NO
Is voltage applied to loading motor ?
NO
Voltage supply system in trouble.
YES
Loading motor is damaged. Replace it.
YES
Modes changing smoothly through cam switch ?
YES
Loading motor control system in trouble.
YES
Does capstan motor turn ?
NO
Are Vco 12V and Vcc5V applied ?
NO
Voltage supply system in trouble.
YES
Replace the capstan motor.
YES
Are idler wheel ass'y and reel disk in mesh ?
NO
Replace the idler ass'y.
YES
Is the pulse outputted from reel sensor ?
NO
Replace the reel sensor.
YES
Check main PWB.

3. WINDING FAILURE AT VSR


Is Playback function normal ?
NO
Go to 2. REC/ PLAY FAILURE routine.
YES
Press REW key.
Master cam shifting to VSR position ?
NO
Go to 2. REC/ PLAY FAILURE routine.
YES
Are idler wheel ass'y and supply reel disk in mesh ?
NO
Replace idler gear ass'y.
YES
Is supply reel disk winding torque normal ?
NO
Replace limiter pulley ass'y.
YES
Is pulse outputted from reel sensor?
NO
Replace reel sensor.
YES
Check main PWB.

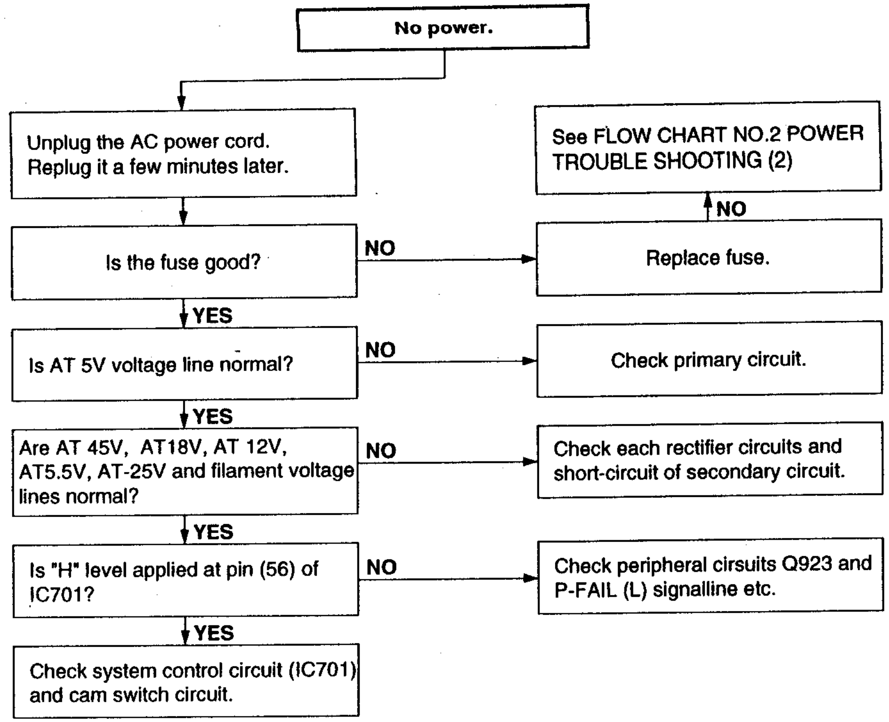
4. UNUSUAL SOUND IN EACH MODE


4-I) Unusual sound in cassette insertion and ejection mode
Is unusal sound heard during cassette coutrol running ?
YES
Replace cassette control ass'y.
NO
Unusual sound heard with pinch roller lever going up or down ?
YES
Check pinch roller drive cam, pinch roller drive lever and reverse guide for their actions. Replace damaged one with new one.
NO
Is unusual sound heard during loading/unloading ?
YES
Replace loading motor block.

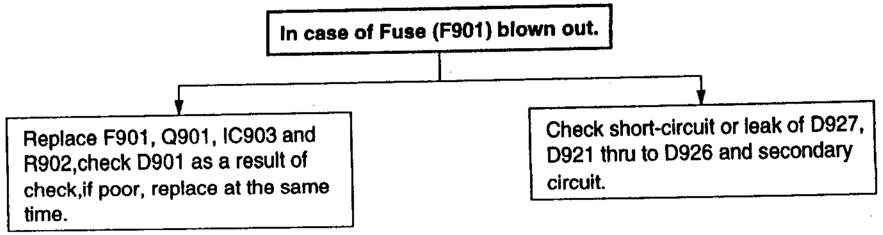

4-ii) Unusual sound in FF/REW mode
Is reel disk height as specified ?
NO
Adjust reel disk height.
YES
Thrust gap found at reel disk ?
NO
Check reel disk and main chassis. And replace defective parts.
YES
Drive system out of contact with any part on main PWB ?
YES
Rearrange the parts on main PWB.
NO
Turn capstan motor by hand. Unusual sound heard ?
YES
Replace capstan motor.
NO
Check drive system's gears for damage. Replace damaged gear with new one.
• Reel disk
• Limiter pulley ass'y
• Idler wheel ass'y

7. ELECTRICAL TROUBLESHOOTING

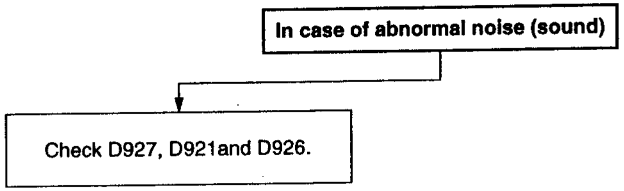
FLOW CHART NO.1 POWER TROUBLESHOOTING (1)


No power.
Unplug the AC power cord. Replug it a few minutes later.
Is the fuse good?
NO
Replace fuse.
NO
See FLOW CHART NO.2 POWER TROUBLE SHOOTING (2)
YES
Is AT 5V voltage line normal?
NO
Check primary circuit.
YES
Are AT 45V, AT18V, AT 12V, AT5.5V, AT-25V and filament voltage lines normal?
NO
Check each rectifier circuits and short-circuit of secondary circuit.
YES
Is "H" level applied at pin (56) of IC701?
NO
Check peripheral cirsuits Q923 and P-FAIL (L) signalline etc.
YES
Check system control circuit (IC701) and cam switch circuit.

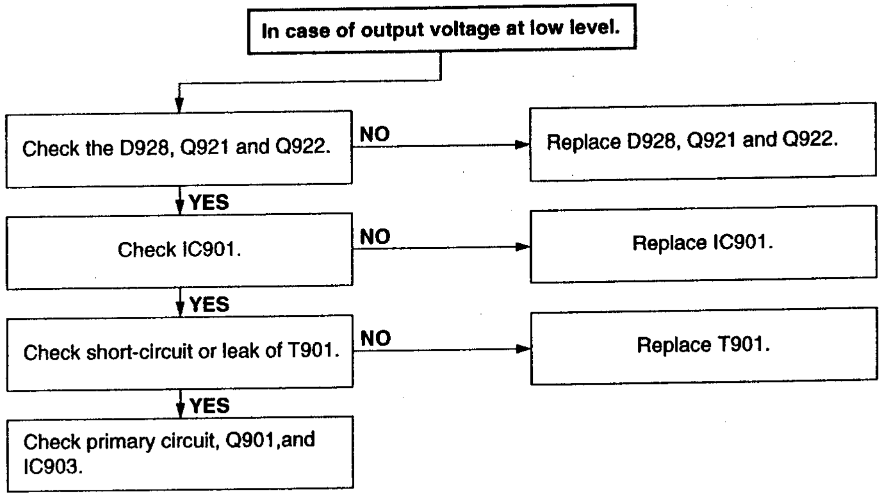
FLOW CHART NO.2 POWER TROUBLESHOOTING (2)


In case of Fuse (F901) blown out.
Replace F901, Q901, IC903 and R902,check D901 as a result of check,if poor, replace at the same time.
Check short-circuit or leak of D927, D921 thru to D926 and secondary circuit.

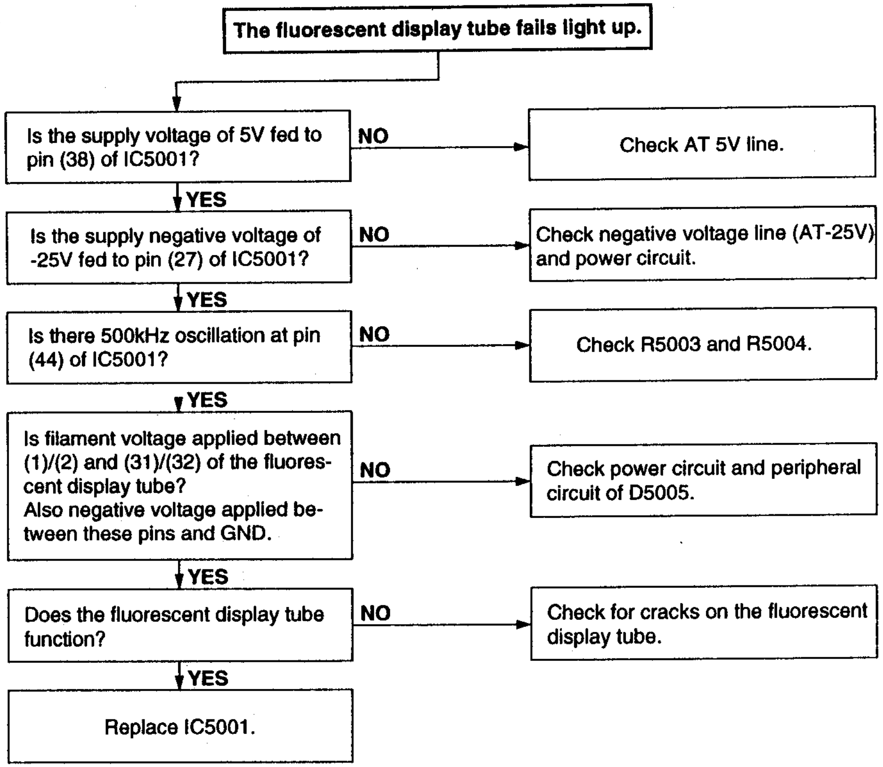
FLOW CHART NO.3 POWER TROUBLESHOOTING (3)


In case of abnormal noise (sound)
Check D927, D921and D926.

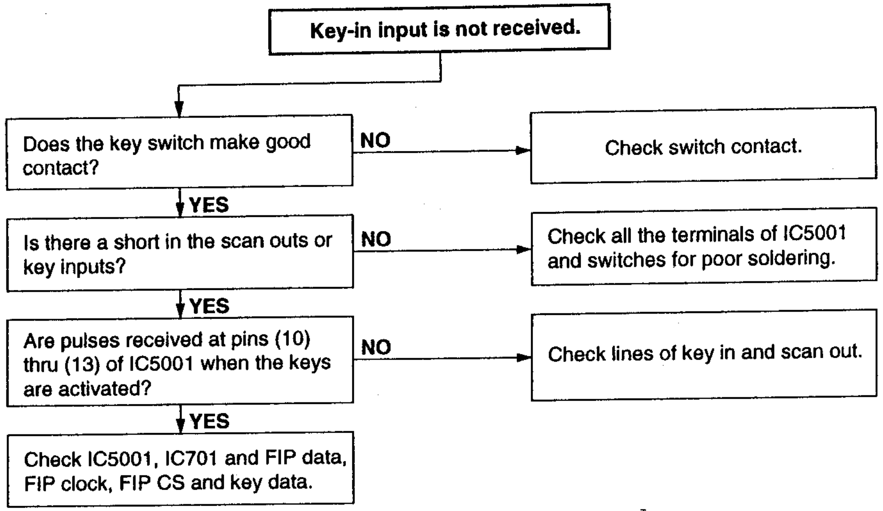
FLOW CHART NO.4 POWER TROUBLESHOOTING (4)


In case of output voltage at low level.
Check the D928, Q921 and Q922.
NO
Replace D928, Q921 and Q922.
YES
Check IC901.
NO
Replace IC901.
YES
Check short-circuit or leak of T901.
NO
Replace T901.
YES
Check primary circuit, Q901,and IC903.

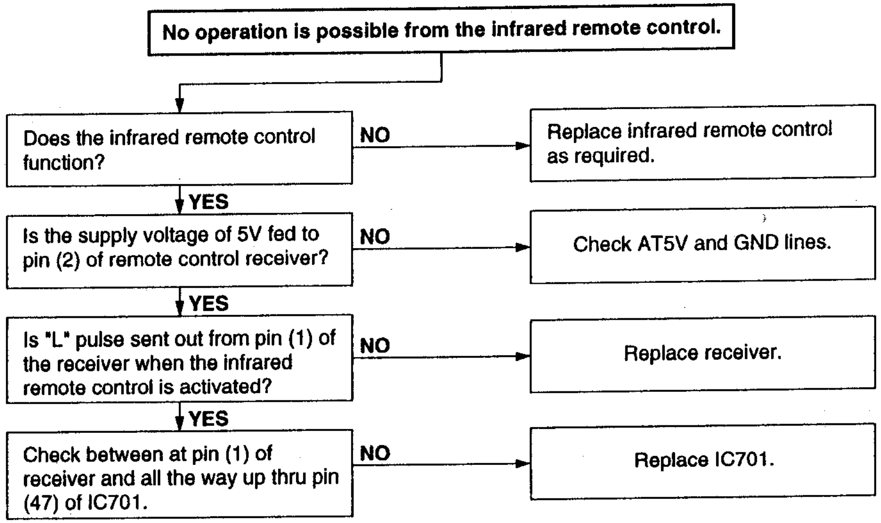
FLOW CHART NO.5 TIMER (1) TROUBLESHOOTING


The fluorescent display tube fails light up.
Is the supply voltage of 5V fed to pin (38) of IC5001?
NO
Check AT 5V line.
YES
Is the supply negative voltage of -25V fed to pin (27) of IC5001?
NO
Check negative voltage line (AT-25V) and power circuit.
YES
Is there 500kHz oscillation at pin (44) of IC5001?
NO
Check R5003 and R5004.
YES
Is filament voltage applied between (1)/(2) and (31)/(32) of the fluorescent display tube? Also negative voltage applied between these pins and GND.
NO
Check power circuit and peripheral circuit of D5005.
YES
Does the fluorescent display tube function?
NO
Check for cracks on the fluorescent display tube.
YES
Replace IC5001.

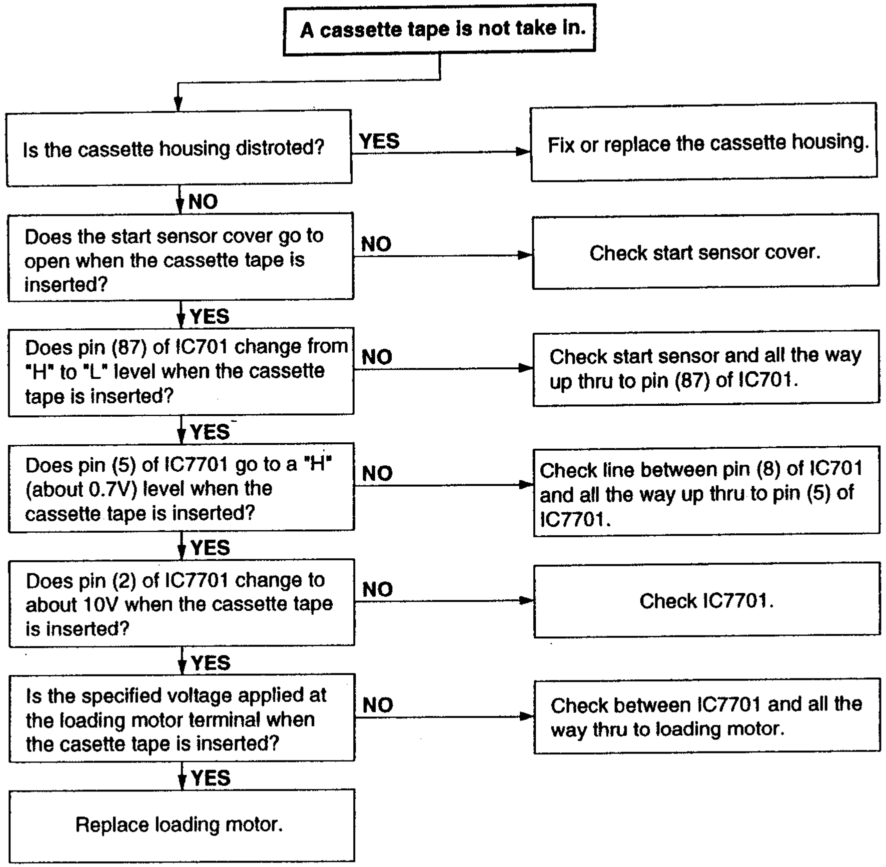
FLOW CHART NO.6 TIMER (2) TROUBLESHOOTING


Key-in input is not received.
Does the key switch make good contact?
NO
Check switch contact.
YES
Is there a short in the scan outs or key inputs?
NO
Check all the terminals of IC5001 and switches for poor soldering.
YES
Are pulses received at pins (10) thru (13) of IC5001 when the keys are activated?
NO
Check lines of key in and scan out.
YES
Check IC5001, IC701 and FIP data, FIP clock, FIP CS and key data.

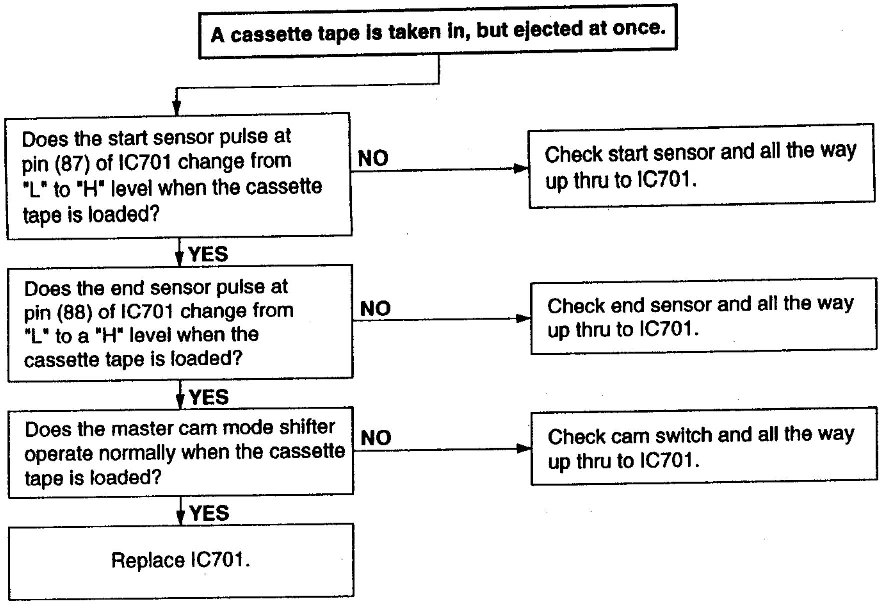
FLOW CHART NO.7 INFRARED R/C TROUBLESHOOTING


No operation is possible from the infrared remote control.
Does the infrared remote control function?
NO
Replace infrared remote control as required.
YES
Is the supply voltage of 5V fed to pin (2) of remote control receiver?
NO
Check AT5V and GND lines.
YES
Is "L" pulse sent out from pin (1) of the receiver when the infrared remote control is activated?
NO
Replace receiver.
YES
Check between at pin (1) of receiver and all the way up thru pin (47) of IC701.
NO
Replace IC701.

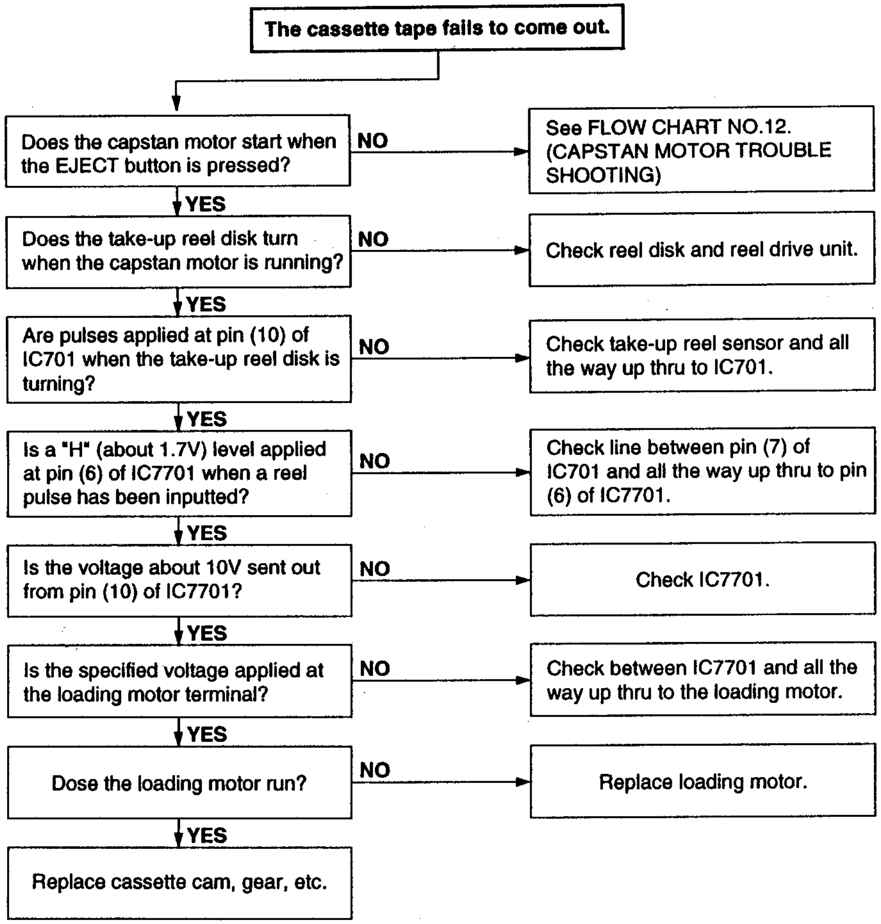
FLOW CHART NO.8 CASSETTE CONTROL TROUBLESHOOTING(1)


A cassette tape is not take in.
Is the cassette housing distroted?
YES
Fix or replace the cassette housing.
NO
Does the start sensor cover go to open when the cassette tape is inserted?
NO
Check start sensor cover.
YES
Does pin (87) of IC701 change from "H" to "L" level when the cassette tape is inserted?
NO
Check start sensor and all the way up thru to pin (87) of IC701.
YES
Does pin (5) of IC7701 go to a "H" (about 0.7V) level when the cassette tape is inserted?
NO
Check line between pin (8) of IC701 and all the way up thru to pin (5) of IC7701.
YES
Does pin (2) of IC7701 change to about 10V when the cassette tape is inserted?
NO
Check IC7701.
YES
Is the specified voltage applied at the loading motor terminal when the casette tape is inserted?
NO
Check between IC7701 and all the way thru to loading motor.
YES
Replace loading motor.

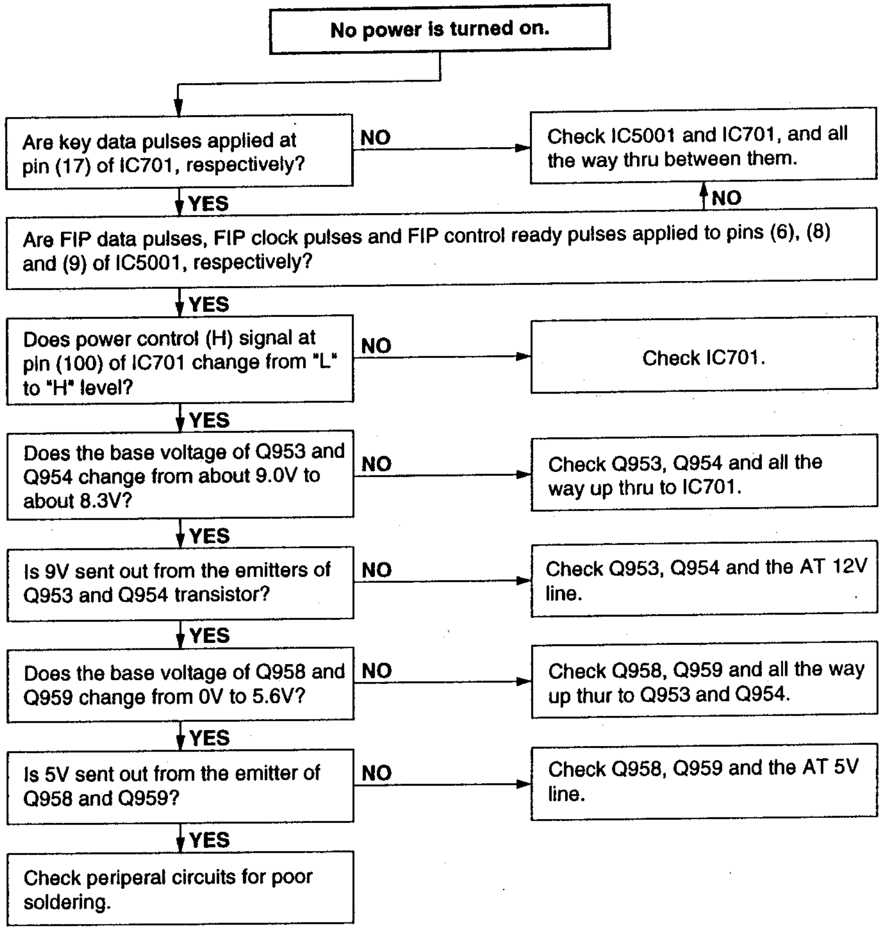
FLOW CHART NO.9 CASSETTE CONTROL TROUBLESHOOTING (2)


A cassette tape is taken in, but ejected at once.
Does the start sensor pulse at pin (87) of IC701 change from "L" to "H" level when the cassette tape is loaded?
NO
Check start sensor and all the way up thru to IC701.
YES
Does the end sensor pulse at pin (88) of IC701 change from "L" to a "H" level when the cassette tape is loaded?
NO
Check end sensor and all the way up thru to IC701.
YES
Does the master cam mode shifter operate normally when the cassette tape is loaded?
NO
Check cam switch and all the way up thru to IC701.
YES
Replace IC701.

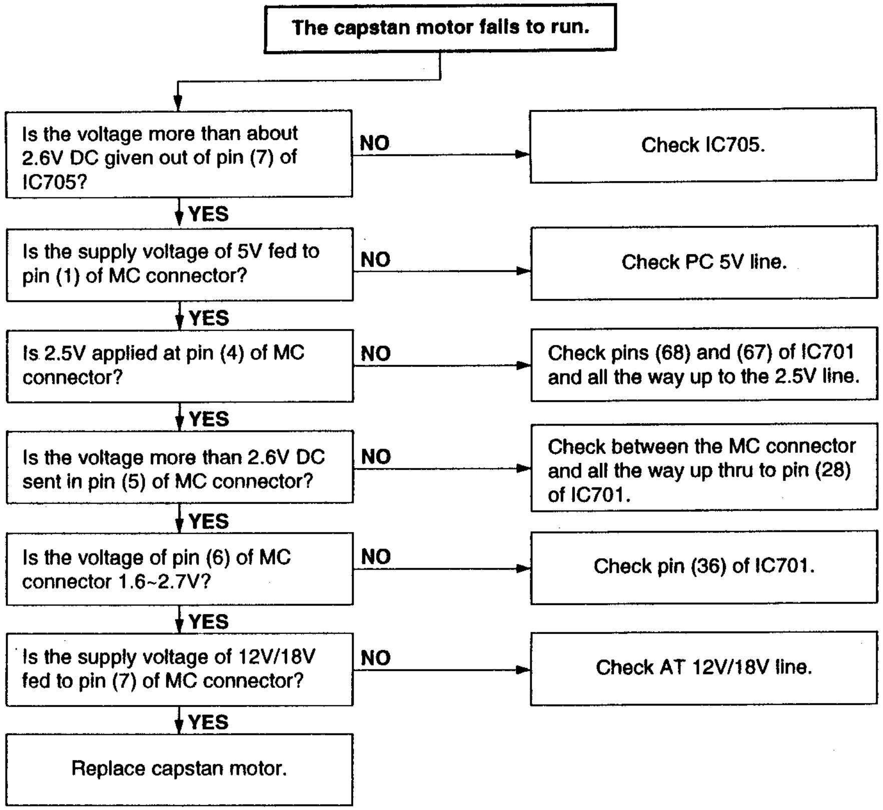
FLOW CHART NO.10 LOADING MOTOR AND EJECT TROUBLESHOOTING


The cassette tape fails to come out.
Does the capstan motor start when the EJECT button is pressed?
NO
See FLOW CHART NO.12. (CAPSTAN MOTOR TROUBLE SHOOTING)
YES
Does the take-up reel disk turn when the capstan motor is running?
NO
Check reel disk and reel drive unit.
YES
Are pulses applied at pin (10) of IC701 when the take-up reel disk is turning?
NO
Check take-up reel sensor and all the way up thru to IC701.
YES
Is a "H" (about 1.7V) level applied at pin (6) of IC7701 when a reel pulse has been inputted?
NO
Check line between pin (7) of IC701 and all the way up thru to pin (6) of IC7701.
YES
Is the voltage about 10V sent out from pin (10) of IC7701?
NO
Check IC7701.
YES
Is the specified voltage applied at the loading motor terminal?
NO
Check between IC7701 and all the way up thru to the loading motor.
YES
Dose the loading motor run?
NO
Replace loading motor.
YES
Replace cassette cam, gear, etc.

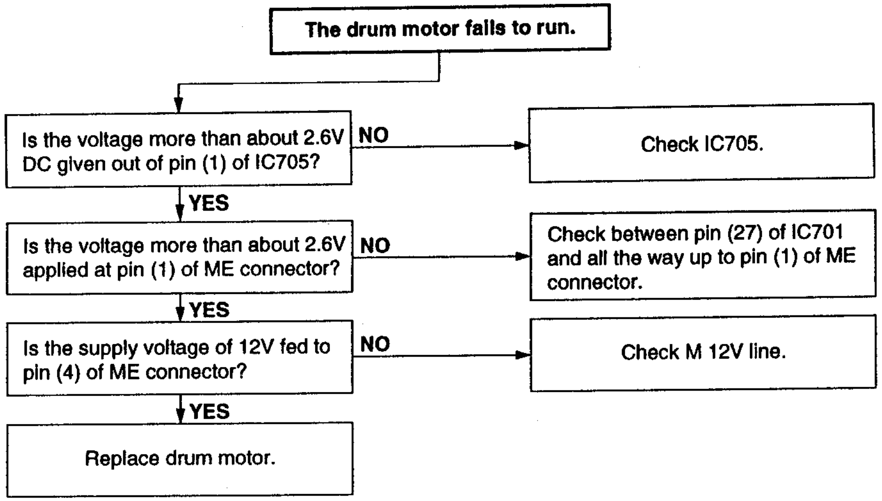
FLOW CHART NO.11 SYSTEM CONTROL TROUBLESHOOTING


No power is turned on.
Are key data pulses applied at pin (17) of IC701, respectively?
NO
Check IC5001 and IC701, and all the way thru between them.
YES
Are FIP data pulses, FIP clock pulses and FIP control ready pulses applied to pins (6), (8) and (9) of IC5001, respectively?
NO
YES
Does power control (H) signal at pin (100) of IC701 change from "L" to "H" level?
NO
Check IC701.
YES
Does the base voltage of Q953 and Q954 change from about 9.0V to about 8.3V?
NO
Check Q953, Q954 and all the way up thru to IC701.
YES
Is 9V sent out from the emitters of Q953 and Q954 transistor?
NO
Check Q953, Q954 and the AT 12V line.
YES
Does the base voltage of Q958 and Q959 change from 0V to 5.6V?
NO
Check Q958, Q959 and all the way up thur to Q953 and Q954.
YES
Is 5V sent out from the emitter of Q958 and Q959?
NO
Check Q958, Q959 and the AT 5V line.
YES
Check periperal circuits for poor soldering.

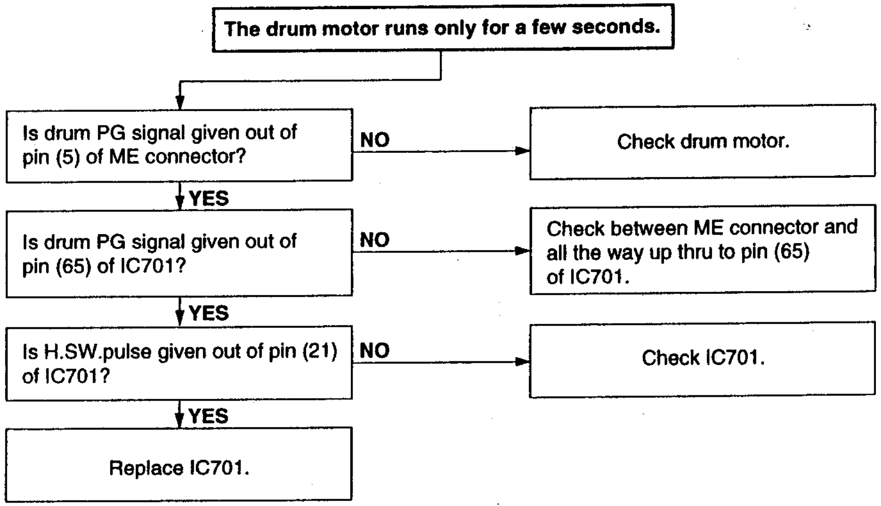
FLOW CHART NO.12 CAPSTAN MOTOR TROUBLESHOOTING


The capstan motor fails to run.
Is the voltage more than about 2.6V DC given out of pin (7) of IC705?
NO
Check IC705.
YES
Is the supply voltage of 5V fed to pin (1) of MC connector?
NO
Check PC 5V line.
YES
Is 2.5V applied at pin (4) of MC connector?
NO
Check pins (68) and (67) of IC701 and all the way up to the 2.5V line.
YES
Is the voltage more than 2.6V DC sent in pin (5) of MC connector?
NO
Check between the MC connector and all the way up thru to pin (28) of IC701.
YES
Is the voltage of pin (6) of MC connector 1.6~2.7V?
NO
Check pin (36) of IC701.
YES
Is the supply voltage of 12V/18V fed to pin (7) of MC connector?
NO
Check AT 12V/18V line.
YES
Replace capstan motor.

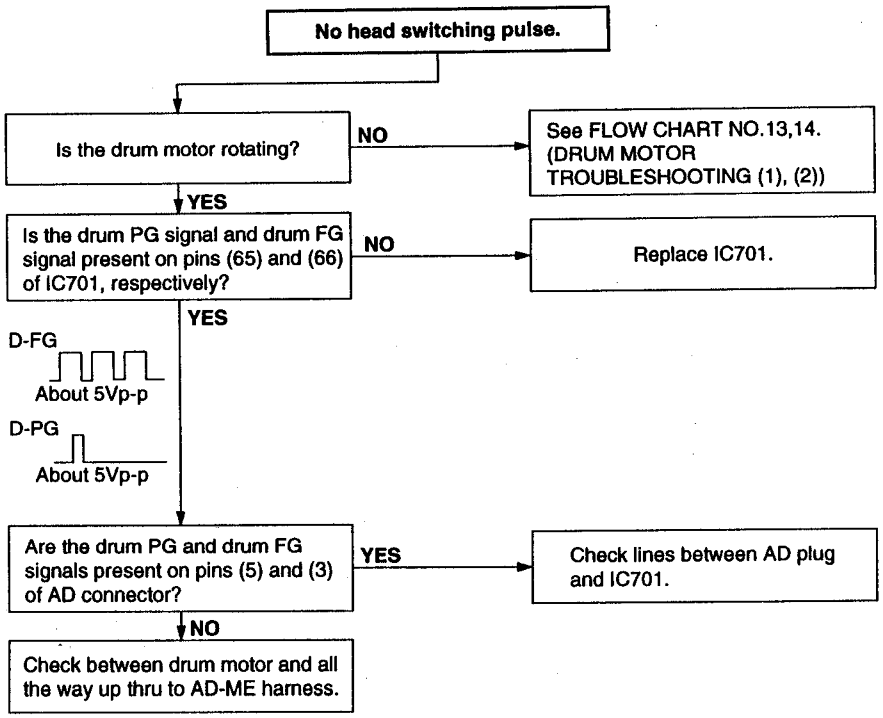
FLOW CHART NO.13 DRUM MOTOR TROUBLESHOOTING (1)


The drum motor fails to run.
Is the voltage more than about 2.6V DC given out of pin (1) of IC705?
NO
Check IC705.
YES
Is the voltage more than about 2.6V applied at pin (1) of ME connector?
NO
Check between pin (27) of IC701 and all the way up to pin (1) of ME connector.
YES
Is the supply voltage of 12V fed to pin (4) of ME connector?
NO
Check M 12V line.
YES
Replace drum motor.

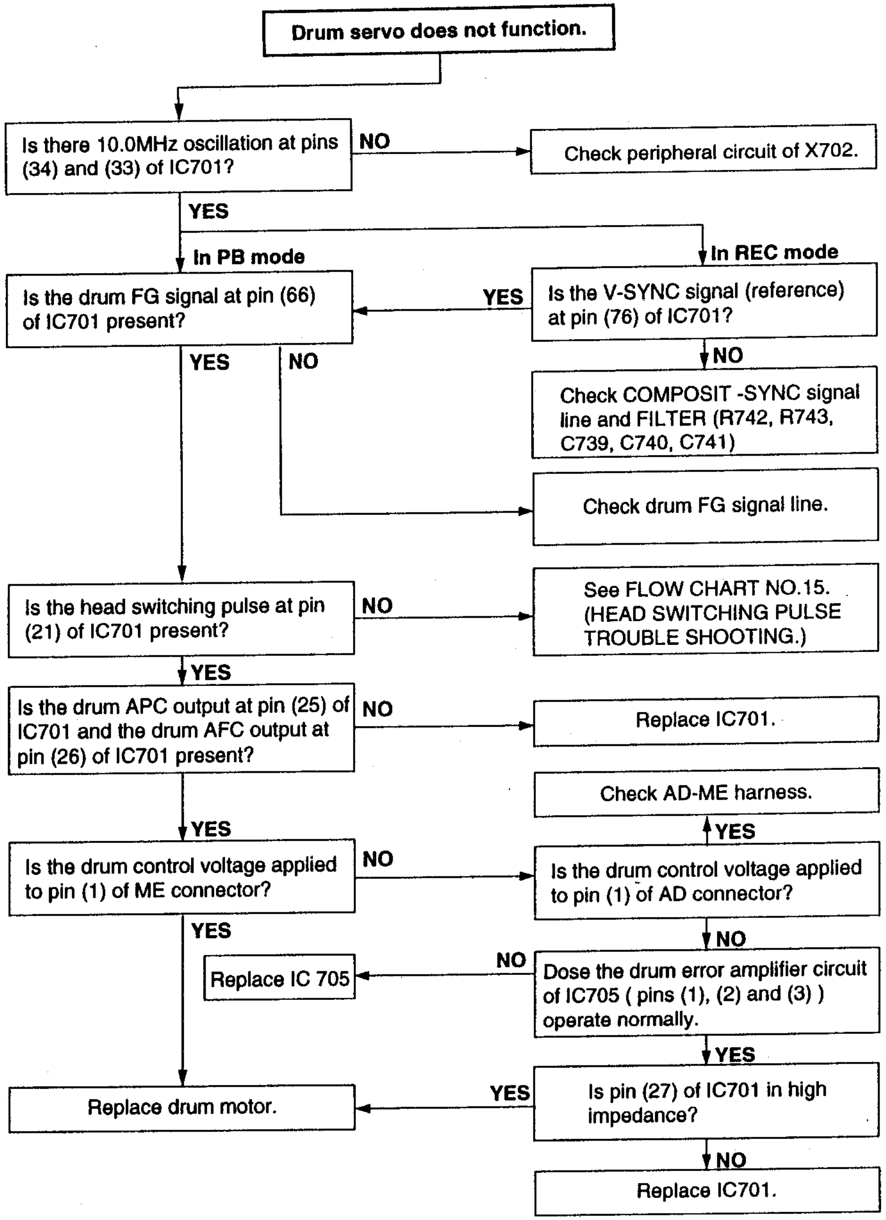
FLOW CHART NO.14 DRUM MOTOR TROUBLESHOOTING (2)


The drum motor runs only for a few seconds.
Is drum PG signal given out of pin (5) of ME connector?
NO
Check drum motor.
YES
Is drum PG signal given out of pin (65) of IC701?
NO
Check between ME connector and all the way up thru to pin (65) of IC701.
YES
Is H.SW.pulse given out of pin (21) of IC701?
NO
Check IC701.
YES
Replace IC701.

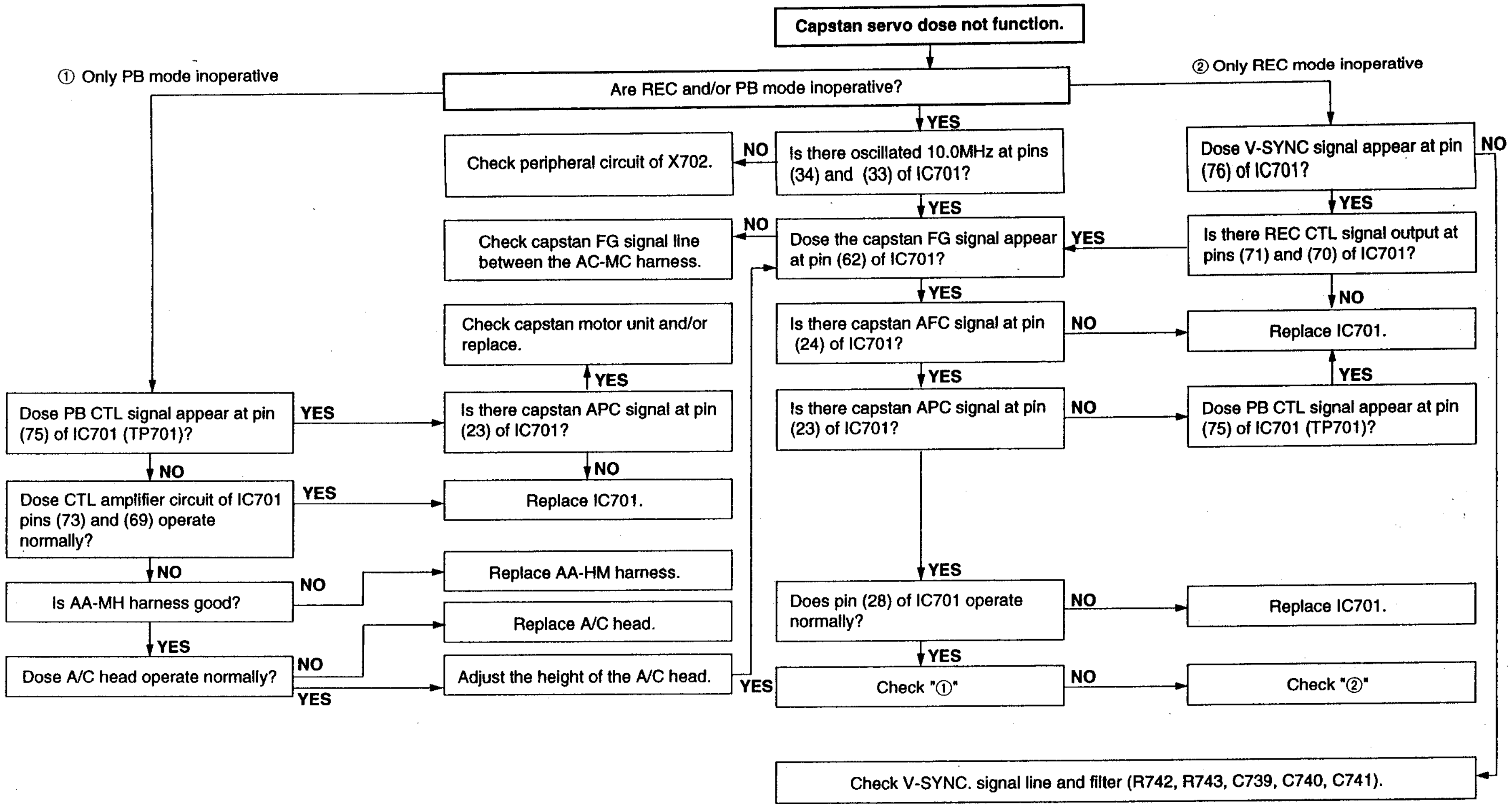
FLOW CHART NO.15 HEAD SWITCHING PULSE TROUBLESHOOTING.


No head switching pulse.
Is the drum motor rotating?
NO
See FLOW CHART NO.13,14. (DRUM MOTOR TROUBLESHOOTING (1), (2))
YES
Is the drum PG signal and drum FG signal present on pins (65) and (66) of IC701, respectively?
NO
Replace IC701.
YES
D-FG
About 5Vp-p
D-PG
About 5Vp-p
Are the drum PG and drum FG signals present on pins (5) and (3) of AD connector?
YES
Check lines between AD plug and IC701.
NO
Check between drum motor and all the way up thru to AD-ME harness.

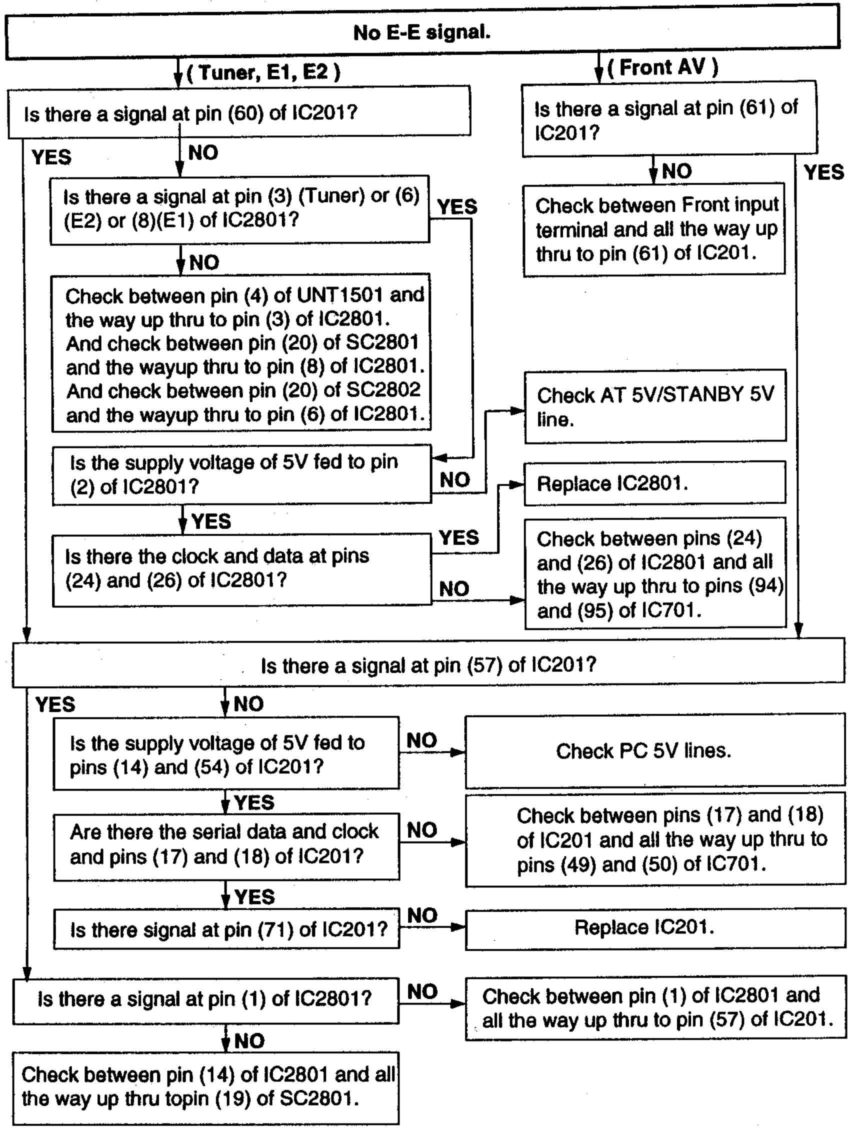
FLOW CHART NO.16 DRUM SERVO TROUBLESHOOTING


Drum servo does not function.
Is there 10.0MHz oscillation at pins (34) and (33) of IC701?
NO
Check peripheral circuit of X702.
YES
In PB mode
In REC mode
Is the V-SYNC signal (reference) at pin (76) of IC701?
YES
NO
Check COMPOSIT -SYNC signal line and FILTER (R742, R743, C739, C740, C741)
Is the drum FG signal at pin (66) of IC701 present?
NO
Check drum FG signal line.
YES
Is the head switching pulse at pin (21) of IC701 present?
NO
See FLOW CHART NO.15. (HEAD SWITCHING PULSE TROUBLE SHOOTING.)
YES
Is the drum APC output at pin (25) of IC701 and the drum AFC output at pin (26) of IC701 present?
NO
Replace IC701.
YES
Is the drum control voltage applied to pin (1) of ME connector?
NO
Is the drum control voltage applied to pin (1) of AD connector?
YES
Check AD-ME harness.
NO
Dose the drum error amplifier circuit of IC705 (pins (1), (2) and (3)) operate normally.
NO
Replace IC 705
YES
Is pin (27) of IC701 in high impedance?
YES
NO
Replace IC701.
YES
Replace drum motor.

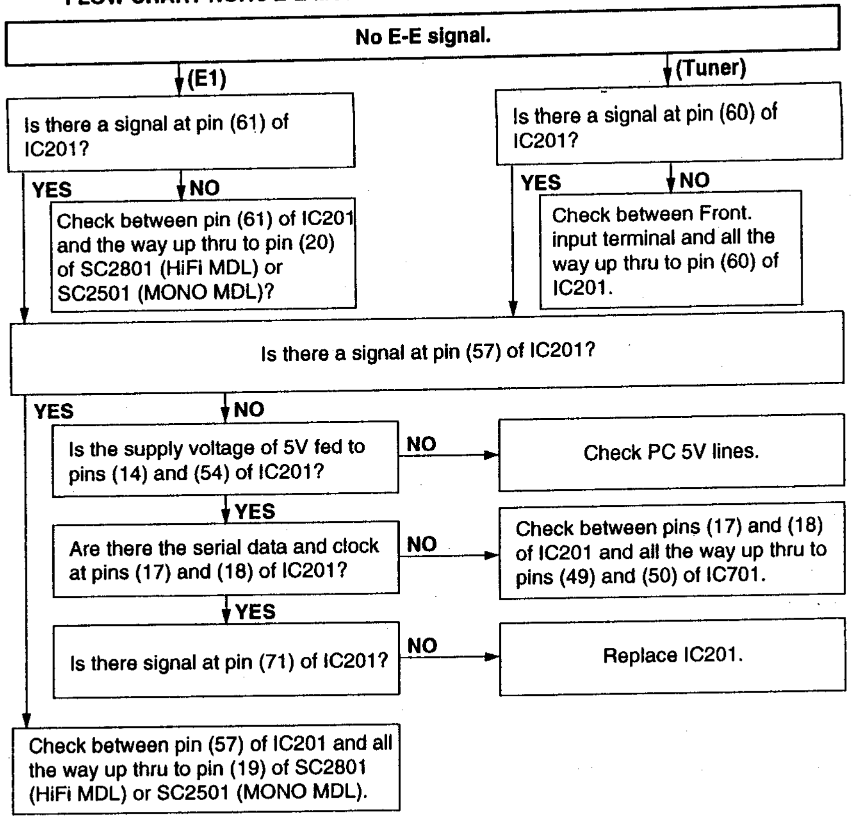
FLOW CHART NO.17 SYSTEM CONTROL SERVO TROUBLESHOOTING


Capstan servo dose not function.
Are REC and/or PB mode inoperative?
① Only PB mode inoperative
② Only REC mode inoperative
YES
Is there oscillated 10.0MHz at pins (34) and (33) of IC701?
NO
Check peripheral circuit of X702.
YES
Dose the capstan FG signal appear at pin (62) of IC701?
NO
Check capstan FG signal line between the AC-MC harness.
YES
Is there capstan AFC signal at pin (24) of IC701?
NO
Replace IC701.
YES
Is there capstan APC signal at pin (23) of IC701?
NO
Dose PB CTL signal appear at pin (75) of IC701 (TP701)?
YES
Replace IC701.
YES
Does pin (28) of IC701 operate normally?
NO
Replace IC701.
YES
Check "①"
NO
Check "②"
Dose V-SYNC signal appear at pin (76) of IC701?
NO
Check V-SYNC. signal line and filter (R742, R743, C739, C740, C741).
YES
Is there REC CTL signal output at pins (71) and (70) of IC701?
YES
NO
Dose PB CTL signal appear at pin (75) of IC701 (TP701)?
YES
Is there capstan APC signal at pin (23) of IC701?
YES
Check capstan motor unit and/or replace.
NO
Replace IC701.
NO
Dose CTL amplifier circuit of IC701 pins (73) and (69) operate normally?
YES
NO
Is AA-MH harness good?
NO
Replace AA-HM harness.
YES
Dose A/C head operate normally?
NO
Replace A/C head.
YES
Adjust the height of the A/C head.
YES

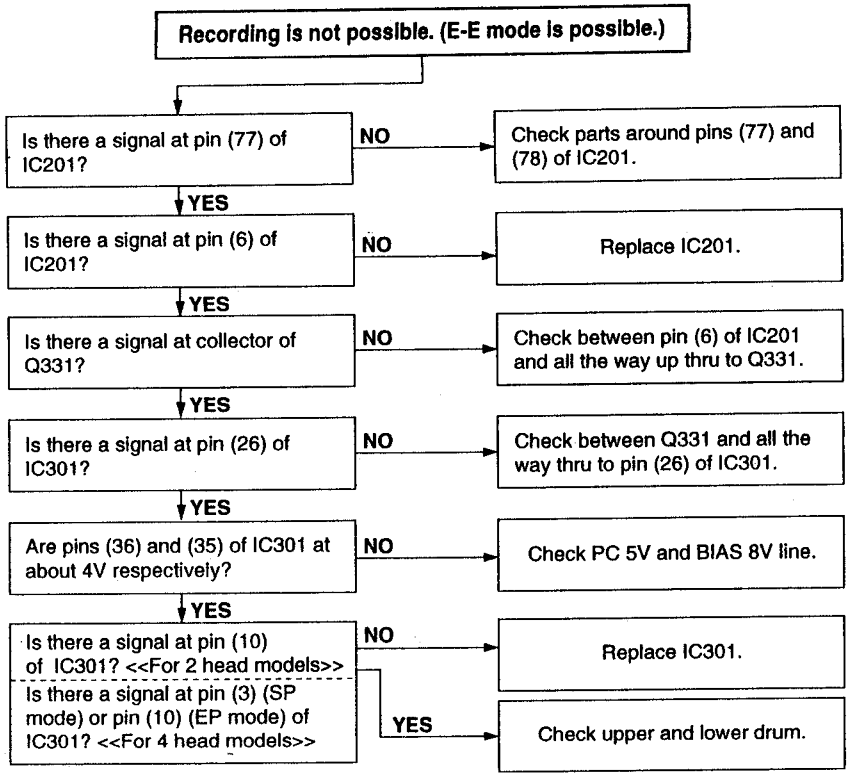
FLOW CHART NO.18 E-E MODE TROUBLESHOOTING (with DECODER)


No E-E signal.
(Tuner, E1, E2)
(Front AV)
Is there a signal at pin (60) of IC201?
YES
NO
Is there a signal at pin (61) of IC201?
NO
YES
Is there a signal at pin (3) (Tuner) or (6) (E2) or (8)(E1) of IC2801?
YES
Check between Front input terminal and all the way up thru to pin (61) of IC201.
NO
Check between pin (4) of UNT1501 and the way up thru to pin (3) of IC2801. And check between pin (20) of SC2801 and the wayup thru to pin (8) of IC2801. And check between pin (20) of SC2802 and the wayup thru to pin (6) of IC2801.
Check AT 5V/STANBY 5V line.
Is the supply voltage of 5V fed to pin (2) of IC2801?
NO
Replace IC2801.
YES
Is there the clock and data at pins (24) and (26) of IC2801?
YES
NO
Check between pins (24) and (26) of IC2801 and all the way up thru to pins (94) and (95) of IC701.
Is there a signal at pin (57) of IC201?
YES
NO
Is the supply voltage of 5V fed to pins (14) and (54) of IC201?
NO
Check PC 5V lines.
YES
Are there the serial data and clock and pins (17) and (18) of IC201?
NO
Check between pins (17) and (18) of IC201 and all the way up thru to pins (49) and (50) of IC701.
YES
Is there signal at pin (71) of IC201?
NO
Replace IC201.
Is there a signal at pin (1) of IC2801?
NO
Check between pin (1) of IC2801 and all the way up thru to pin (57) of IC201.
NO
Check between pin (14) of IC2801 and all the way up thru topin (19) of SC2801.

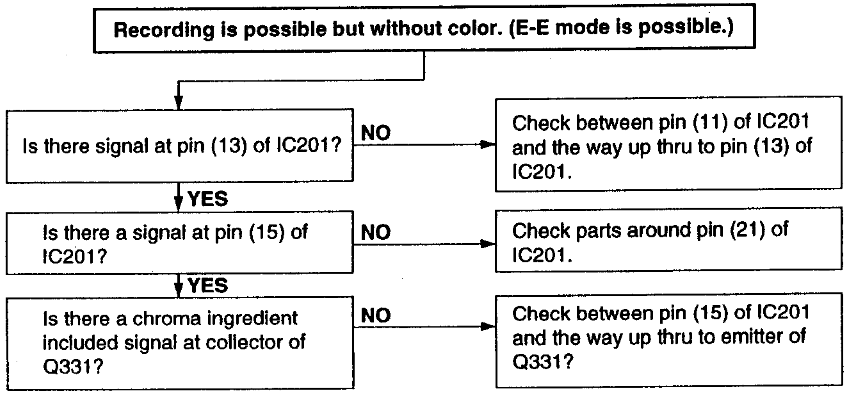
FLOW CHART NO.19 E-E MODE TROUBLESHOOTING (without DECODER)


No E-E signal.
(E1)
(Tuner)
Is there a signal at pin (61) of IC201?
Is there a signal at pin (60) of IC201?
YES
NO
YES
NO
Check between pin (61) of IC201 and the way up thru to pin (20) of SC2801 (HiFi MDL) or SC2501 (MONO MDL)?
Check between Front. input terminal and all the way up thru to pin (60) of IC201.
Is there a signal at pin (57) of IC201?
YES
NO
Is the supply voltage of 5V fed to pins (14) and (54) of IC201?
NO
Check PC 5V lines.
YES
Are there the serial data and clock at pins (17) and (18) of IC201?
NO
Check between pins (17) and (18) of IC201 and all the way up thru to pins (49) and (50) of IC701.
YES
Is there signal at pin (71) of IC201?
NO
Replace IC201.
Check between pin (57) of IC201 and all the way up thru to pin (19) of SC2801 (HiFi MDL) or SC2501 (MONO MDL).

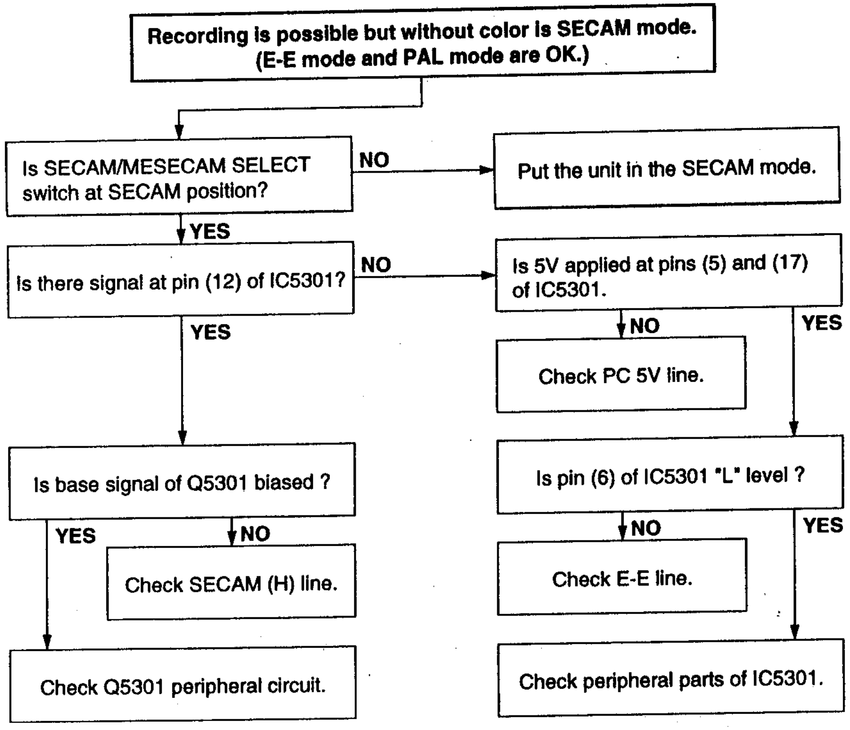
FLOW CHART NO.20 RECORDING MODE (LUMINANCE) TROUBLESHOOTING


Recording is not possible. (E-E mode is possible.)
Is there a signal at pin (77) of IC201?
NO
Check parts around pins (77) and (78) of IC201.
YES
Is there a signal at pin (6) of IC201?
NO
Replace IC201.
YES
Is there a signal at collector of Q331?
NO
Check between pin (6) of IC201 and all the way up thru to Q331.
YES
Is there a signal at pin (26) of IC301?
NO
Check between Q331 and all the way thru to pin (26) of IC301.
YES
Are pins (36) and (35) of IC301 at about 4V respectively?
NO
Check PC 5V and BIAS 8V line.
YES
Is there a signal at pin (10) of IC301? <<For 2 head models>>
Is there a signal at pin (3) (SP mode) or pin (10) (EP mode) of IC301? <<For 4 head models>>
NO
Replace IC301.
YES
Check upper and lower drum.

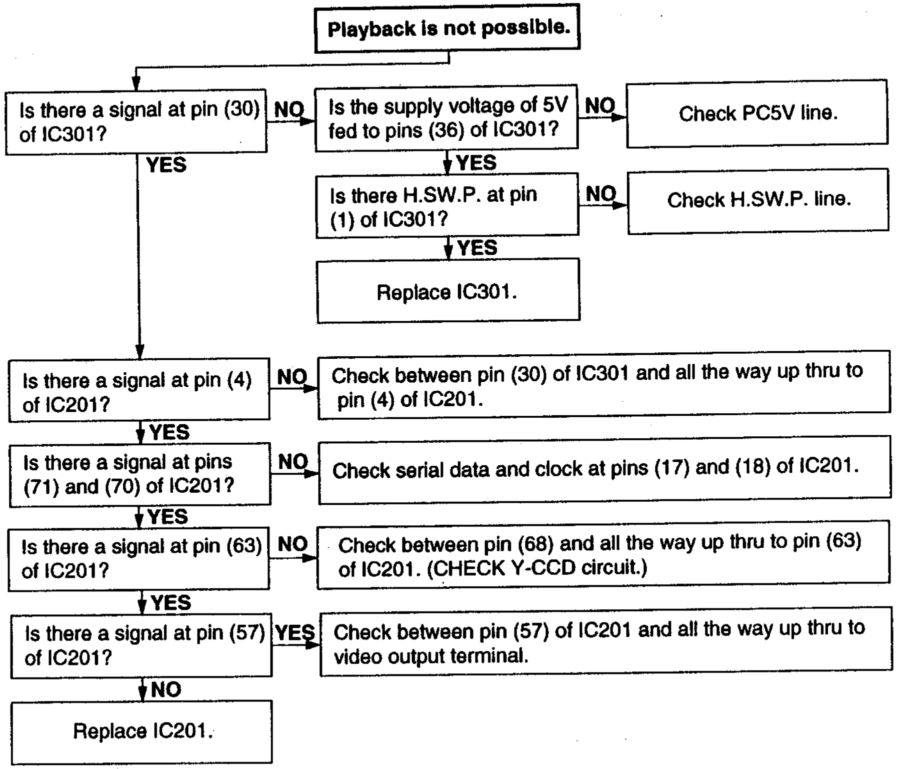
FLOW CHART NO.21 RECORDING MODE (CHROMA) TROUBLESHOOTING


Recording is possible but without color. (E-E mode is possible.)
Is there signal at pin (13) of IC201?
NO
Check between pin (11) of IC201 and the way up thru to pin (13) of IC201.
YES
Is there a signal at pin (15) of IC201?
NO
Check parts around pin (21) of IC201.
YES
Is there a chroma ingredient included signal at collector of Q331?
NO
Check between pin (15) of IC201 and the way up thru to emitter of Q331?

FLOW CHART NO.22 RECORDING MODE (CHROMA) TROUBLESHOOTING


Recording is possible but without color is SECAM mode. (E-E mode and PAL mode are OK.)
Is SECAM/MESECAM SELECT switch at SECAM position?
NO
Put the unit in the SECAM mode.
YES
Is there signal at pin (12) of IC5301?
NO
Is 5V applied at pins (5) and (17) of IC5301.
NO
Check PC 5V line.
YES
Is pin (6) of IC5301 "L" level ?
NO
Check E-E line.
YES
Check peripheral parts of IC5301.
YES
Is base signal of Q5301 biased ?
NO
Check SECAM (H) line.
YES
Check Q5301 peripheral circuit.

FLOW CHART NO.23 PLAYBACK MODE (LUMINANCE) TROUBLESHOOTING



Playback is not possible.

Is there a signal at pin (30) of IC301?

Is the supply voltage of 5V fed to pins (36) of IC301?

Check PC5V line.

Is there H.SW.P. at pin (1) of IC301?

Check H.SW.P. line.

Replace IC301.

Is there a signal at pin (4) of IC201?

Check between pin (30) of IC301 and all the way up thru to pin (4) of IC201.

Is there a signal at pins (71) and (70) of IC201?

Check serial data and clock at pins (17) and (18) of IC201.

Is there a signal at pin (63) of IC201?

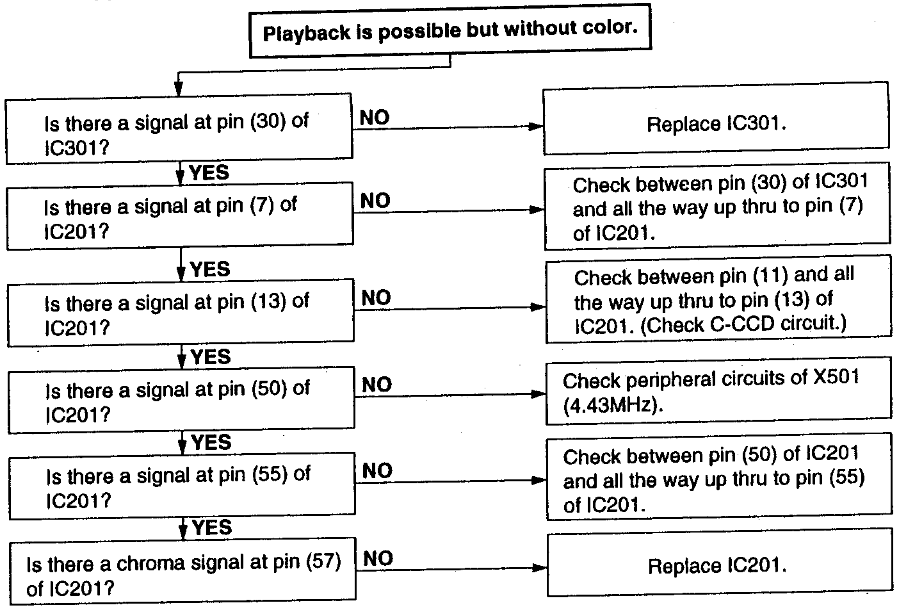
Check between pin (68) and all the way up thru to pin (63) of IC201. (CHECK Y-CCD circuit.)

Is there a signal at pin (57) of IC201?

Check between pin (57) of IC201 and all the way up thru to video output terminal.

Replace IC201.

FLOW CHART NO.24 PLAYBACK MODE (CHROMA) TROUBLESHOOTING



Playback is possible but without color.

Is there a signal at pin (30) of IC301?

Replace IC301.

Is there a signal at pin (7) of IC201?

Check between pin (30) of IC301 and all the way up thru to pin (7) of IC201.

Is there a signal at pin (13) of IC201?

Check between pin (11) and all the way up thru to pin (13) of IC201. (Check C-CCD circuit.)

Is there a signal at pin (50) of IC201?

Check peripheral circuits of X501 (4.43MHz).

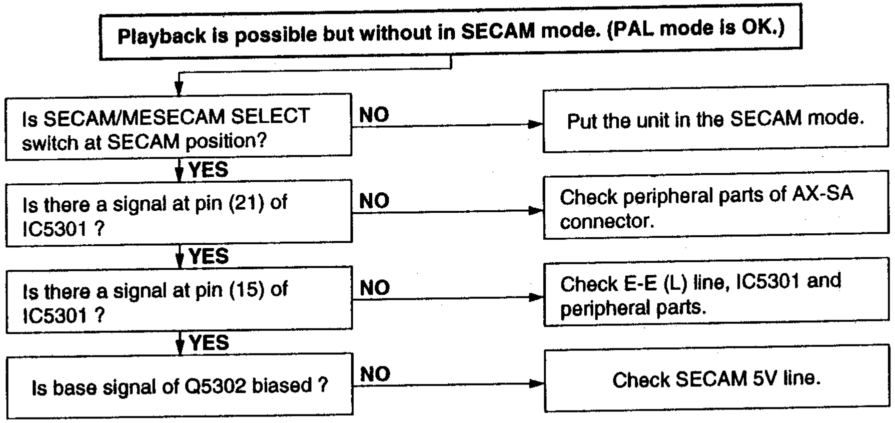
Is there a signal at pin (55) of IC201?

Check between pin (50) of IC201 and all the way up thru to pin (55) of IC201.

Is there a chroma signal at pin (57) of IC201?

Replace IC201.

FLOW CHART NO.25 PLAYBACK MODE (CHROMA) TROUBLE SHOOTING



Playback is possible but without in SECAM mode. (PAL mode is OK.)

Is SECAM/MESECAM SELECT switch at SECAM position?

Put the unit in the SECAM mode.

Is there a signal at pin (21) of IC5301 ?

Check peripheral parts of AX-SA connector.

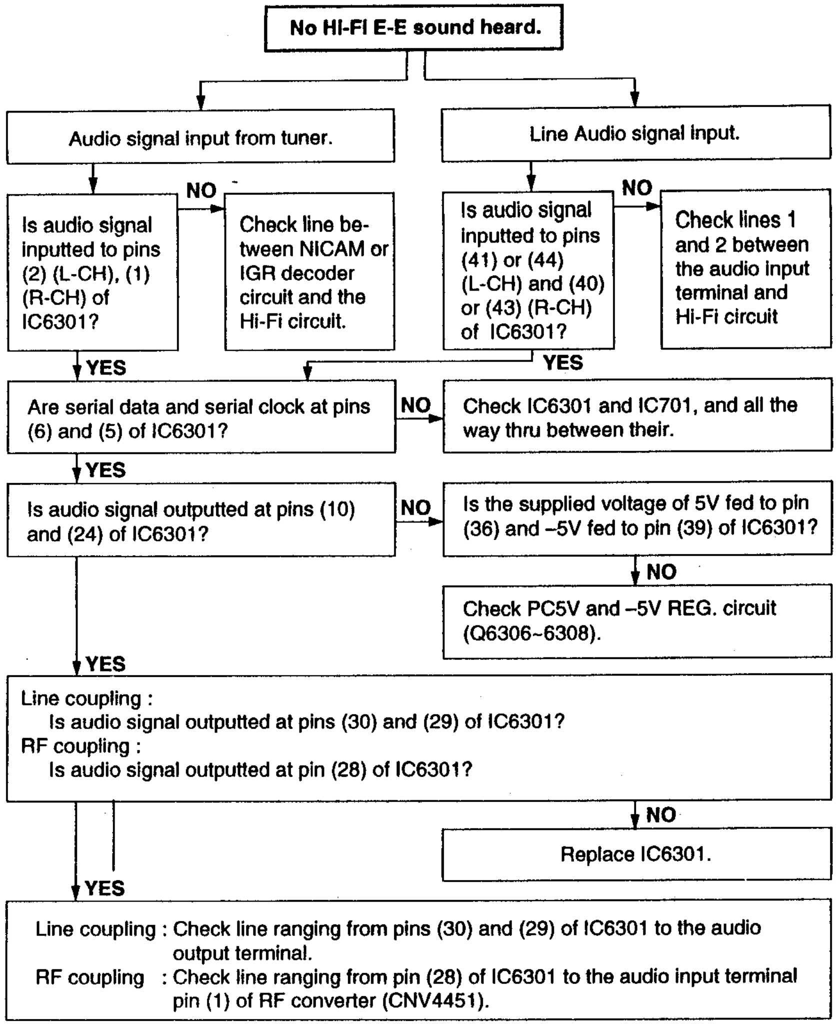
Is there a signal at pin (15) of IC5301 ?

Check E-E (L) line, IC5301 and peripheral parts.

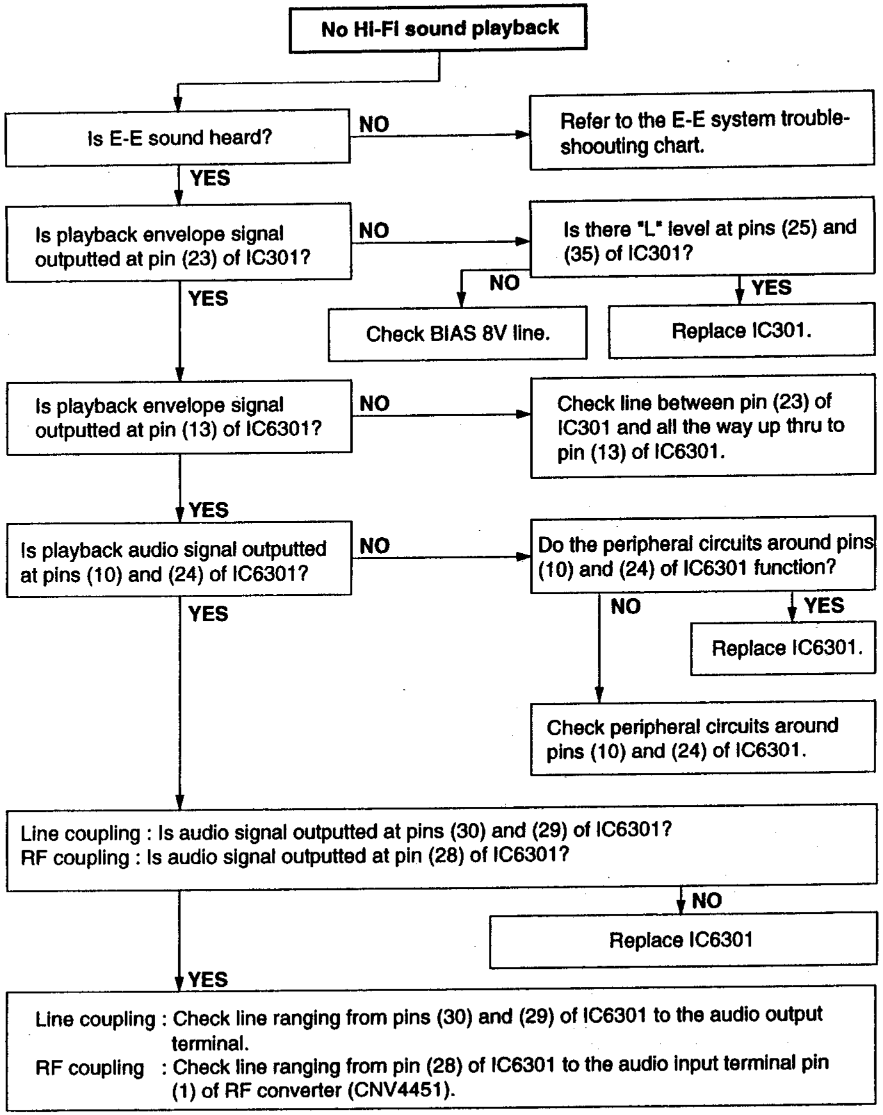
Is base signal of Q5302 biased ?

Check SECAM 5V line.

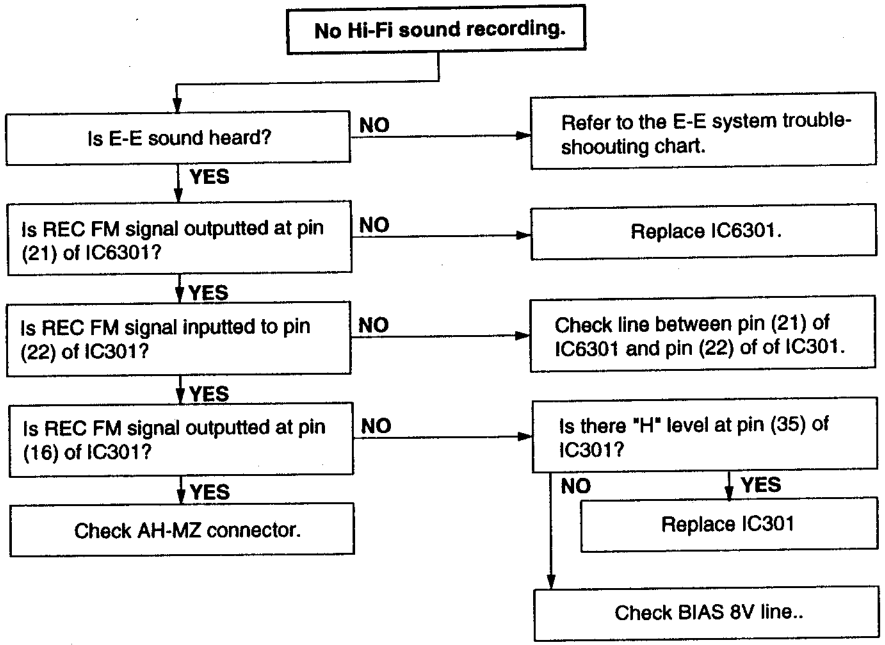
FLOW CHART NO.26 HI-FI TROUBLESHOOTING (1)


No HI-FI E-E sound heard.
Audio signal input from tuner.
Line Audio signal input.
Is audio signal inputted to pins (2) (L-CH), (1) (R-CH) of IC6301?
NO
Check line between NICAM or IGR decoder circuit and the Hi-Fi circuit.
Is audio signal inputted to pins (41) or (44) (L-CH) and (40) or (43) (R-CH) of IC6301?
NO
Check lines 1 and 2 between the audio input terminal and Hi-Fi circuit
YES
YES
Are serial data and serial clock at pins (6) and (5) of IC6301?
NO
Check IC6301 and IC701, and all the way thru between their.
YES
Is audio signal outputted at pins (10) and (24) of IC6301?
NO
Is the supplied voltage of 5V fed to pin (36) and –5V fed to pin (39) of IC6301?
NO
Check PC5V and –5V REG. circuit (Q6306~6308).
YES
Line coupling :
Is audio signal outputted at pins (30) and (29) of IC6301?
RF coupling :
Is audio signal outputted at pin (28) of IC6301?
NO
Replace IC6301.
YES
Line coupling : Check line ranging from pins (30) and (29) of IC6301 to the audio output terminal.
RF coupling : Check line ranging from pin (28) of IC6301 to the audio input terminal pin (1) of RF converter (CNV4451).

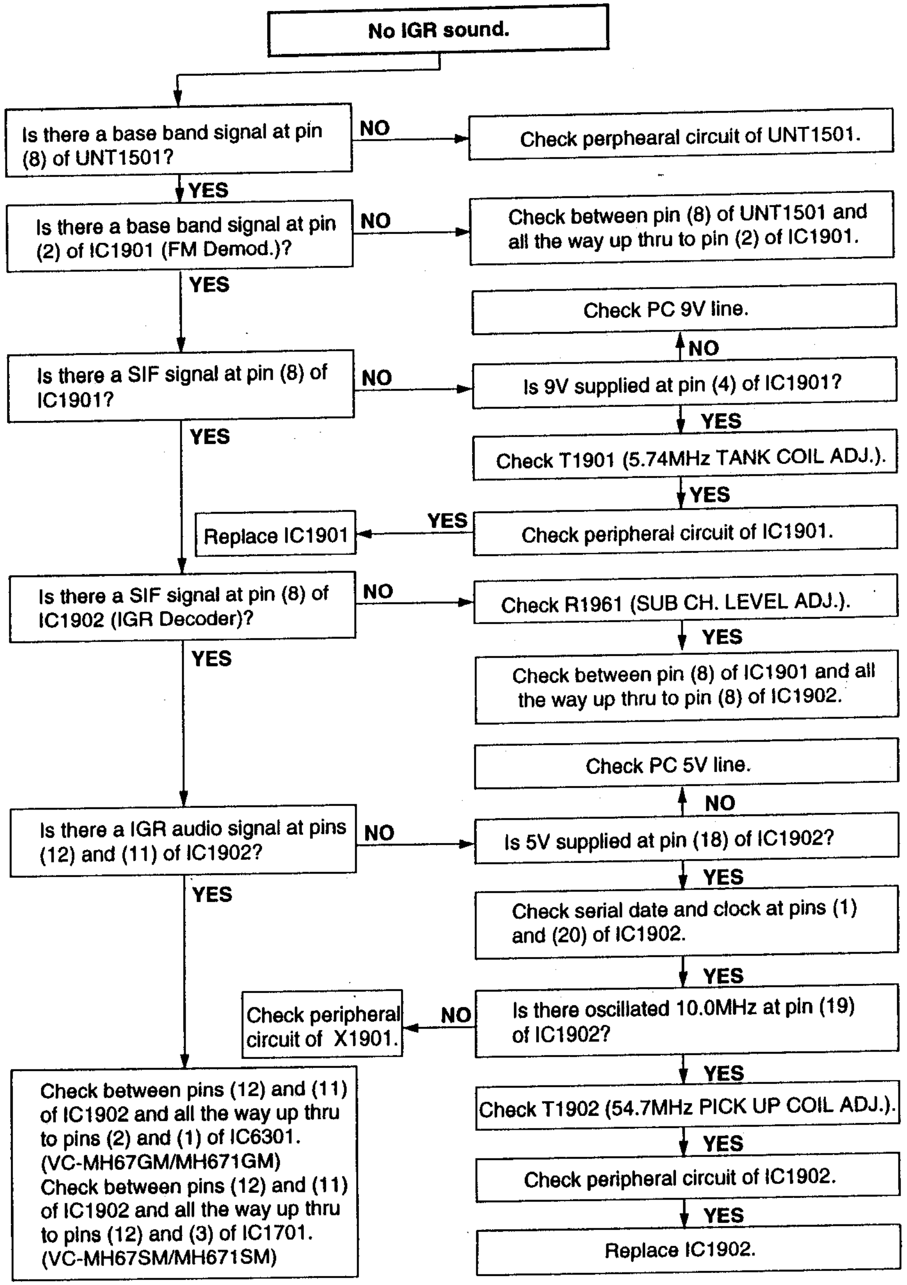
FLOW CHART NO.27 HI-FI TROUBLESHOOTING (2)


No HI-FI sound playback
Is E-E sound heard?
NO
Refer to the E-E system trouble-shoouting chart.
YES
Is playback envelope signal outputted at pin (23) of IC301?
NO
Is there "L" level at pins (25) and (35) of IC301?
NO
YES
Check BIAS 8V line.
Replace IC301.
YES
Is playback envelope signal outputted at pin (13) of IC6301?
NO
Check line between pin (23) of IC301 and all the way up thru to pin (13) of IC6301.
YES
Is playback audio signal outputted at pins (10) and (24) of IC6301?
NO
Do the peripheral circuits around pins (10) and (24) of IC6301 function?
NO
YES
Replace IC6301.
Check peripheral circuits around pins (10) and (24) of IC6301.
YES
Line coupling : Is audio signal outputted at pins (30) and (29) of IC6301?
RF coupling : Is audio signal outputted at pin (28) of IC6301?
NO
Replace IC6301
YES
Line coupling : Check line ranging from pins (30) and (29) of IC6301 to the audio output terminal.
RF coupling : Check line ranging from pin (28) of IC6301 to the audio input terminal pin (1) of RF converter (CNV4451).

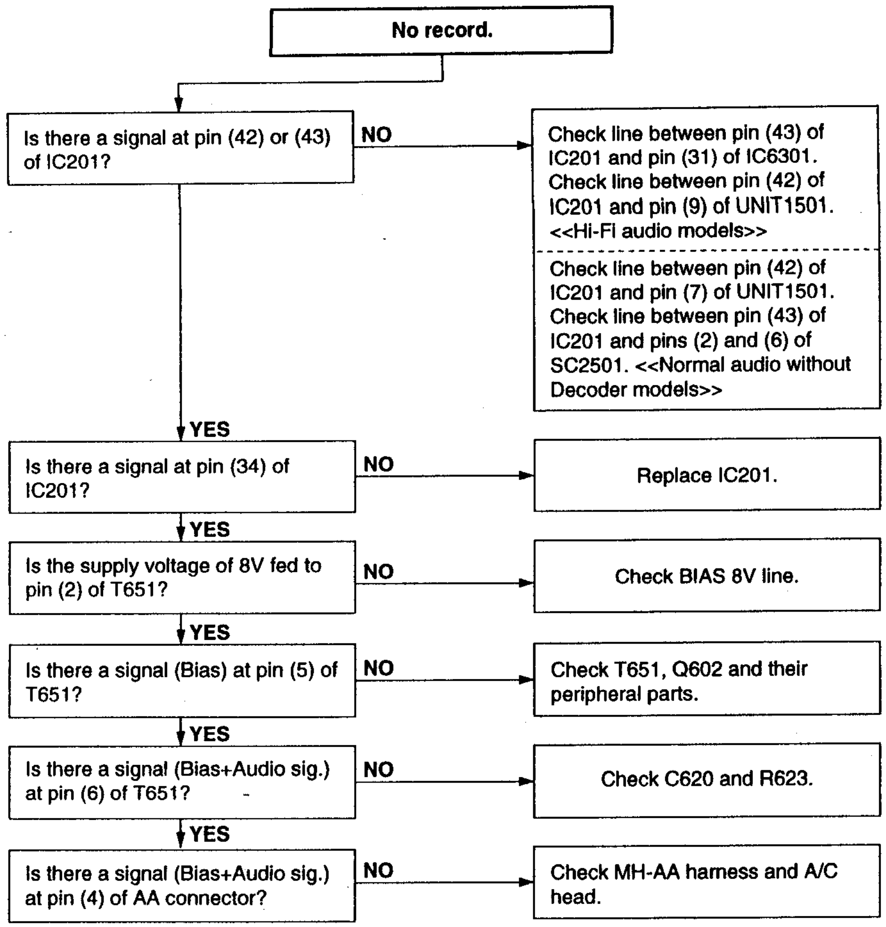
FLOW CHART NO.28 Hi-Fi TROUBLESHOOTING (3)


No Hi-Fi sound recording.
Is E-E sound heard?
NO
Refer to the E-E system trouble-shoouting chart.
YES
Is REC FM signal outputted at pin (21) of IC6301?
NO
Replace IC6301.
YES
Is REC FM signal inputted to pin (22) of IC301?
NO
Check line between pin (21) of IC6301 and pin (22) of of IC301.
YES
Is REC FM signal outputted at pin (16) of IC301?
NO
Is there "H" level at pin (35) of IC301?
YES
Replace IC301
NO
Check BIAS 8V line..
YES
Check AH-MZ connector.

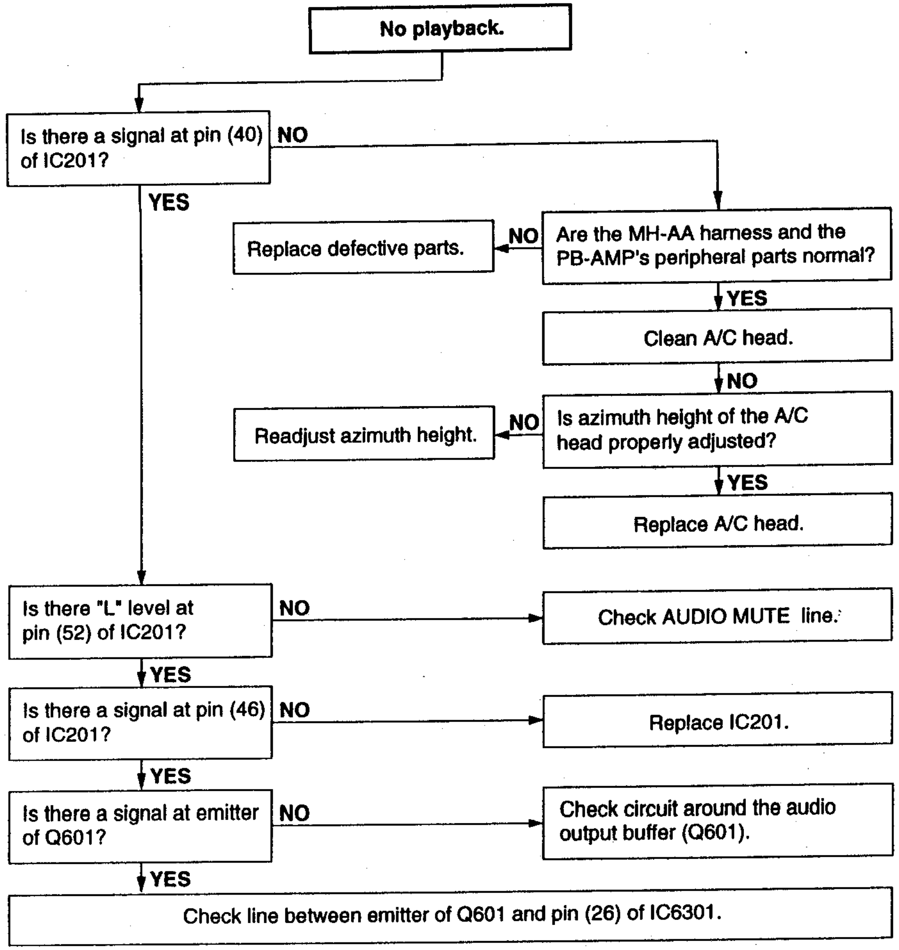
FLOW CHART NO.29 IGR TROUBLESHOOTING


No IGR sound.
Is there a base band signal at pin (8) of UNT1501?
NO
Check perphearal circuit of UNT1501.
YES
Is there a base band signal at pin (2) of IC1901 (FM Demod.)?
NO
Check between pin (8) of UNT1501 and all the way up thru to pin (2) of IC1901.
YES
Is there a SIF signal at pin (8) of IC1901?
NO
Is 9V supplied at pin (4) of IC1901?
NO
Check PC 9V line.
YES
Check T1901 (5.74MHz TANK COIL ADJ.).
YES
Check peripheral circuit of IC1901.
YES
Replace IC1901
YES
Is there a SIF signal at pin (8) of IC1902 (IGR Decoder)?
NO
Check R1961 (SUB CH. LEVEL ADJ.).
YES
Check between pin (8) of IC1901 and all the way up thru to pin (8) of IC1902.
YES
Is there a IGR audio signal at pins (12) and (11) of IC1902?
NO
Is 5V supplied at pin (18) of IC1902?
NO
Check PC 5V line.
YES
Check serial date and clock at pins (1) and (20) of IC1902.
YES
Is there oscillated 10.0MHz at pin (19) of IC1902?
NO
Check peripheral circuit of X1901.
YES
Check T1902 (54.7MHz PICK UP COIL ADJ.).
YES
Check peripheral circuit of IC1902.
YES
Replace IC1902.
YES
Check between pins (12) and (11) of IC1902 and all the way up thru to pins (2) and (1) of IC6301. (VC-MH67GM/MH671GM)
Check between pins (12) and (11) of IC1902 and all the way up thru to pins (12) and (3) of IC1701. (VC-MH67SM/MH671SM)

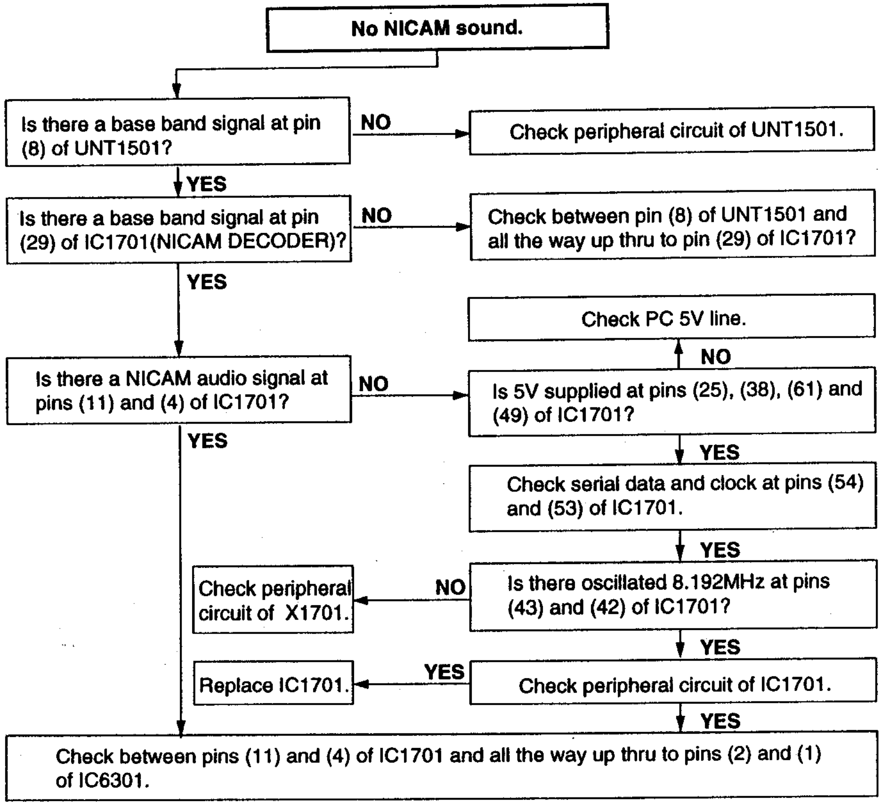
FLOW CHART NO.30 LINEAR SOUND RECORDING MODE TROUBLESHOOTING


No record.
Is there a signal at pin (42) or (43) of IC201?
NO
Check line between pin (43) of IC201 and pin (31) of IC6301. Check line between pin (42) of IC201 and pin (9) of UNIT1501. <<Hi-Fi audio models>>
Check line between pin (42) of IC201 and pin (7) of UNIT1501. Check line between pin (43) of IC201 and pins (2) and (6) of SC2501. <<Normal audio without Decoder models>>
YES
Is there a signal at pin (34) of IC201?
NO
Replace IC201.
YES
Is the supply voltage of 8V fed to pin (2) of T651?
NO
Check BIAS 8V line.
YES
Is there a signal (Bias) at pin (5) of T651?
NO
Check T651, Q602 and their peripheral parts.
YES
Is there a signal (Bias+Audio sig.) at pin (6) of T651?
NO
Check C620 and R623.
YES
Is there a signal (Bias+Audio sig.) at pin (4) of AA connector?
NO
Check MH-AA harness and A/C head.

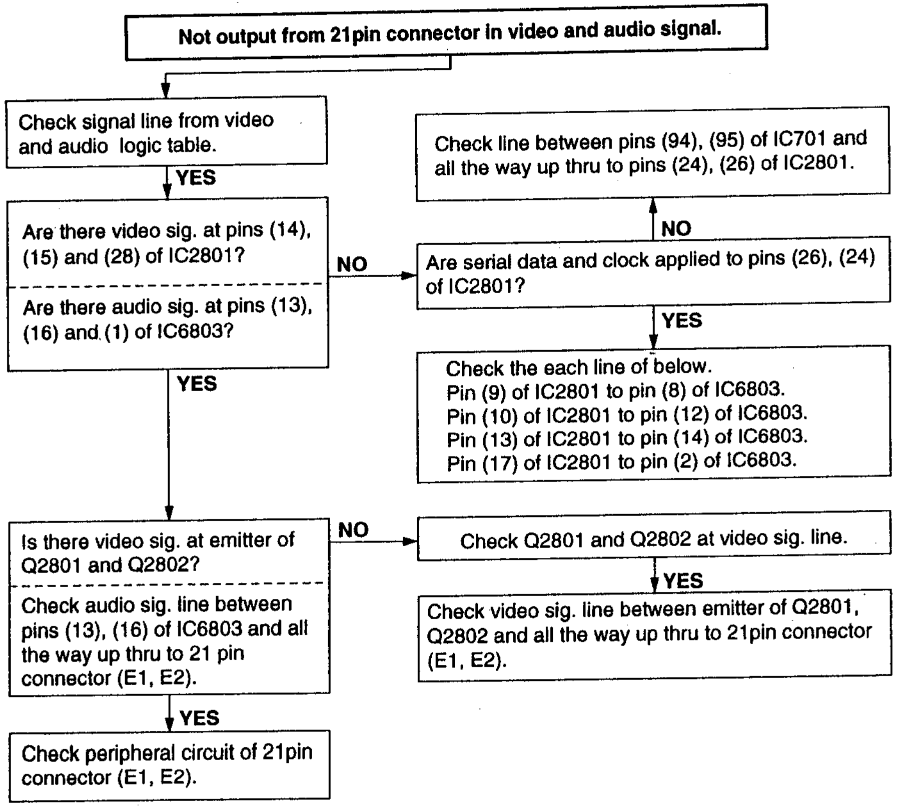
FLOW CHART NO.31 LINEAR SOUND PLAYBACK MODE TROUBLESHOOTING


No playback.
Is there a signal at pin (40) of IC201?
NO
Are the MH-AA harness and the PB-AMP's peripheral parts normal?
NO
Replace defective parts.
YES
Clean A/C head.
NO
Is azimuth height of the A/C head properly adjusted?
NO
Readjust azimuth height.
YES
Replace A/C head.
YES
Is there "L" level at pin (52) of IC201?
NO
Check AUDIO MUTE line.
YES
Is there a signal at pin (46) of IC201?
NO
Replace IC201.
YES
Is there a signal at emitter of Q601?
NO
Check circuit around the audio output buffer (Q601).
YES
Check line between emitter of Q601 and pin (26) of IC6301.

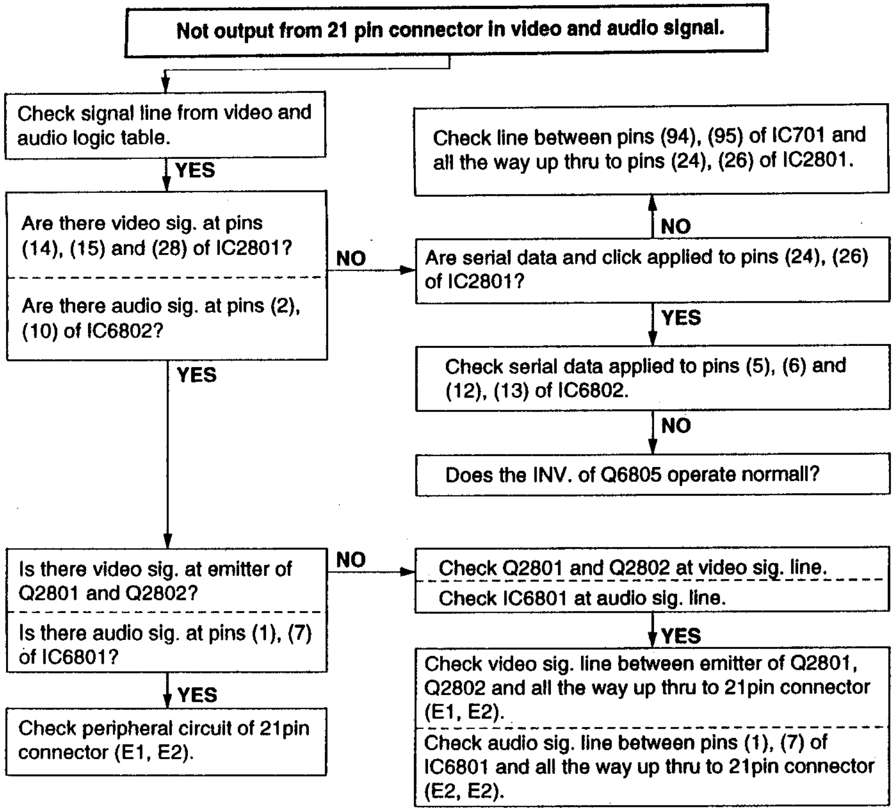
FLOW CHART NO.32 NICAM TROUBLESHOOTING


No NICAM sound.
Is there a base band signal at pin (8) of UNT1501?
NO
Check peripheral circuit of UNT1501.
YES
Is there a base band signal at pin (29) of IC1701(NICAM DECODER)?
NO
Check between pin (8) of UNT1501 and all the way up thru to pin (29) of IC1701?
YES
Is there a NICAM audio signal at pins (11) and (4) of IC1701?
NO
Is 5V supplied at pins (25), (38), (61) and (49) of IC1701?
NO
Check PC 5V line.
YES
Check serial data and clock at pins (54) and (53) of IC1701.
YES
Is there oscillated 8.192MHz at pins (43) and (42) of IC1701?
NO
Check peripheral circuit of X1701.
YES
Check peripheral circuit of IC1701.
YES
Replace IC1701.
YES
YES
Check between pins (11) and (4) of IC1701 and all the way up thru to pins (2) and (1) of IC6301.

FLOW CHART NO.33 DECODER TROUBLESHOOTING (1)


Not output from 21pin connector in video and audio signal.
Check signal line from video and audio logic table.
YES
Are there video sig. at pins (14), (15) and (28) of IC2801?
Are there audio sig. at pins (13), (16) and (1) of IC6803?
NO
Are serial data and clock applied to pins (26), (24) of IC2801?
NO
Check line between pins (94), (95) of IC701 and all the way up thru to pins (24), (26) of IC2801.
YES
Check the each line of below.
Pin (9) of IC2801 to pin (8) of IC6803.
Pin (10) of IC2801 to pin (12) of IC6803.
Pin (13) of IC2801 to pin (14) of IC6803.
Pin (17) of IC2801 to pin (2) of IC6803.
YES
Is there video sig. at emitter of Q2801 and Q2802?
Check audio sig. line between pins (13), (16) of IC6803 and all the way up thru to 21 pin connector (E1, E2).
NO
Check Q2801 and Q2802 at video sig. line.
YES
Check video sig. line between emitter of Q2801, Q2802 and all the way up thru to 21pin connector (E1, E2).
YES
Check peripheral circuit of 21pin connector (E1, E2).

FLOW CHART NO.34 DECODER TROUBLESHOOTING (2)


Not output from 21 pin connector in video and audio signal.
Check signal line from video and audio logic table.
YES
Are there video sig. at pins (14), (15) and (28) of IC2801?
Are there audio sig. at pins (2), (10) of IC6802?
NO
Are serial data and click applied to pins (24), (26) of IC2801?
NO
Check line between pins (94), (95) of IC701 and all the way up thru to pins (24), (26) of IC2801.
YES
Check serial data applied to pins (5), (6) and (12), (13) of IC6802.
NO
Does the INV. of Q6805 operate normall?
YES
Is there video sig. at emitter of Q2801 and Q2802?
Is there audio sig. at pins (1), (7) of IC6801?
NO
Check Q2801 and Q2802 at video sig. line.
Check IC6801 at audio sig. line.
YES
Check video sig. line between emitter of Q2801, Q2802 and all the way up thru to 21pin connector (E1, E2).
Check audio sig. line between pins (1), (7) of IC6801 and all the way up thru to 21pin connector (E2, E2).
YES
Check peripheral circuit of 21pin connector (E1, E2).

REPLACEMENT OF IC703 (E²PROM)

«Servicing precautions»
When the IC703 (E²PROM) has been replaced, make the following reprogramming.
Depending on models, the IC703 (E²PROM) has been factory adjusted for it's memory function.
It's therefore necessary to reprogram the memory function for the model in question.
Note that the servo circuit requires readjustments for the slow and still modes.

Memory function reprogramming.

1. Check the power off. (power is standby mode)
2. Make for a moment short-circuit between TP5001 and TP5002, both located at the front side on the main PWB. Be sure that all the fluorescent display tubes light up into the TEST mode.
3. Using the CHANNEL (+) and (–) buttons, select the right function numbers from among JP0-JP39, which appear in the fluorescent display tube, referring to the E²PROM map.
   Press the DISPLAY button to pick up the functions (ON) and the CLEAR button to discard the functions (OFF).
   DISPLAY and CLEAR buttons, are located on the remote control unit.
   - * When the DISPLAY button has been pressed (ON), the memory function No. starts flashing.
   - * When the CLEAR button has been pressed (OFF), the memory function No. lights up.
4. Make a momentary short-circuit between TP5003 and TP5004, both located at the front of the main PWB. By so doing, the lower 7 of the 10 digits are displayed in hexadecimal notation.
5. Similarly to the above step 4, make a momentary short-circuit bvetween TP5007 and TP5004, both located at the front of the main PWB. By so doing, the upper 3 of the 10 digits are displayed in hexadecimal notation.
6. Example: "ON" and "OFF" are taken as "1" and "0" respectively.
   The numbers JP0 to JP39 are divided into four groups and each group's setting is displayed in hexadecimal notation.

JP39	JP38	JP37	JP36	JP35	JP34	JP33	JP32	JP31	JP30	JP29	JP28
0	0	0	0	0	0	0	1	0	0	0	0
⇩				⇩				⇩			
0				1				0			

JP27	JP26	JP25	JP24	JP23	JP22	JP21	JP20	JP19	JP18	JP17	JP16	JP15	JP14	JP13	JP12	JP11	JP10	JP09	JP08	JP07	JP06	JP05	JP04	JP03	JP02	JP01	JP00
1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0
⇩				⇩				⇩				⇩				⇩				⇩				⇩			
C				0				0				4				3				0				0			

"010 0004300" appears in the fluorescent display tube.

7. Finally make for a moment short-circuit between TP5001 and TP5002, both located at the front side on the main PWB to clear the TEST mode.

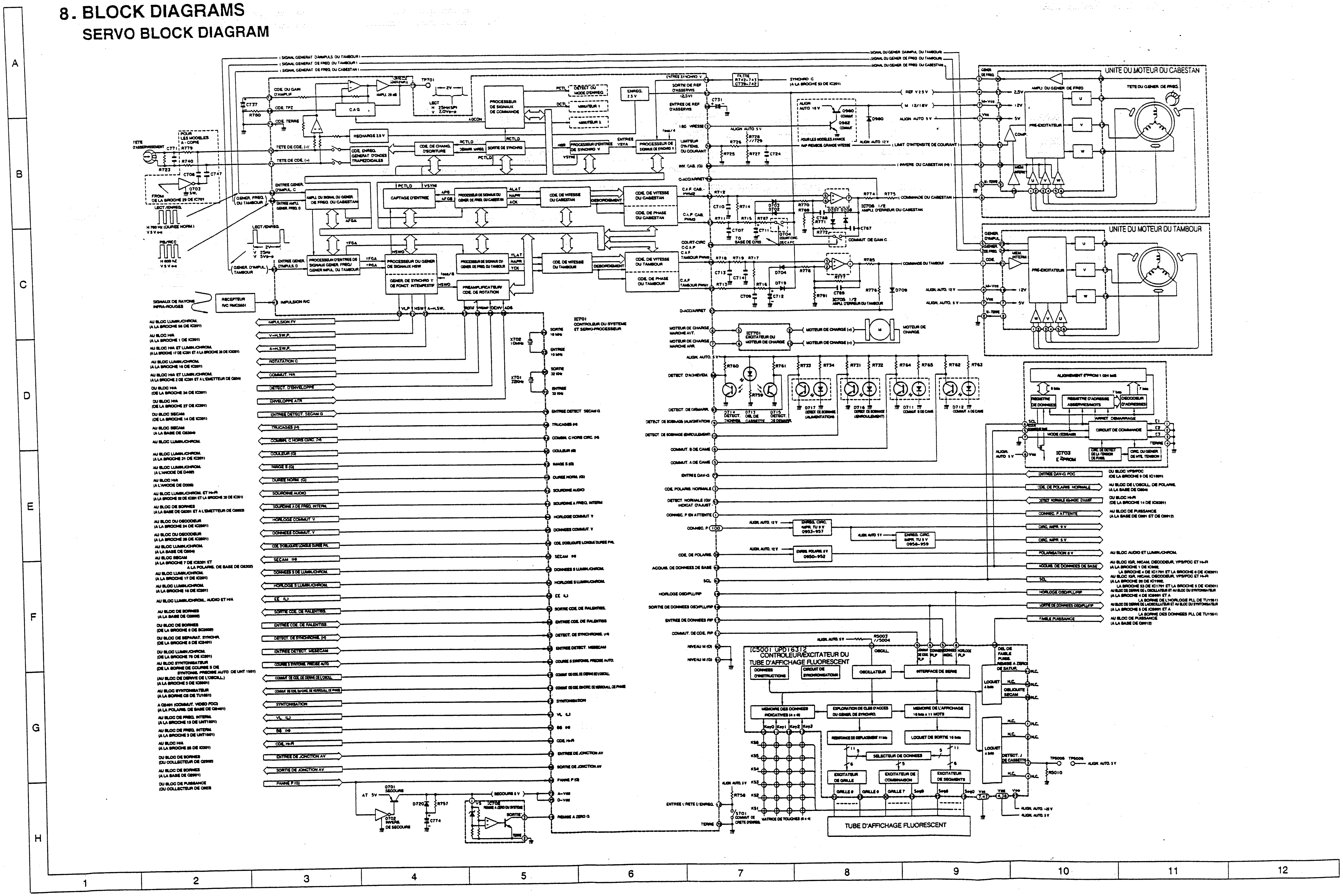
ROM MAP

No.	FUNCTION \ MODEL NAME	M29FPM	M49FPM	MH66FPM	MH68FPM	MH69FPM
JP-39	A.DUB	0	0	0	0	1
JP-38	SLOW ATR	0	0	0	0	0
JP-37	HIGH SPEED X180	0	0	0	1	1
JP-36	NTSC PB	0	1	1	1	1
JP-35	NTSC SKEW	0	0	0	0	0
JP-34	HEAD2	1	1	1	1	1
JP-33	HEAD1	0	1	1	1	1
JP-32	HEAD0	0	0	0	0	0
JP-31	PDC 8bit	0	0	0	0	0
JP-30	LCD	0	0	0	0	0
JP-29	89 CHANNEL	1	1	1	1	1
JP-28	R/C 1,2 SWITCH	0	0	0	0	0
JP-27	C-LOCK2	1	1	1	1	1
JP-26	POST CODE	0	0	0	0	0
JP-25	SAT CTL	0	0	0	0	1
JP-24	AV LINK	0	0	0	0	0
JP-23	Hi-Fi	0	0	1	1	1
JP-22	A-SORT/CLOCK	1	1	1	1	1
JP-21	DECODER	1	1	1	1	1
JP-20	SHUTTLE	1	1	0	1	1
JP-19	NICAM1	0	0	1	1	1
JP-18	NICAM0	0	0	0	1	1
JP-17	G-CODE1	0	0	0	0	0
JP-16	G-CODE0	1	1	0	1	1
JP-15	OEM	0	0	0	0	0
JP-14	LP mode	0	1	1	1	1
JP-13	FRONT AV	0	0	0	1	1
JP-12	X2 SCART	1	1	1	1	1
JP-11	VPS 8bit	1	1	1	1	1
JP-10	TUNER2	1	1	1	1	1
JP-09	TUNER1	0	0	0	0	0
JP-08	TUNER0	1	1	1	1	1
JP-07	SYSTEM1	0	0	0	0	0
JP-06	SYSTEM0	0	0	0	0	0
JP-05	SAT SCAN	0	0	0	0	0
JP-04	TV/VCR	0	0	0	0	0
JP-03	SPATILAIZE	0	0	0	0	0
JP-02	VPS/PDC	1	1	1	1	1
JP-01	COLOUR1	1	1	1	1	1
JP-00	COLOUR0	0	0	0	0	0
DISPLAY IN HEXADECIMAL NOTATION		0428711D06	1628715D06	1628E85D06	3628FD7D06	B62AFD7D06

(Note: "1" : flashing "0" : lights up)

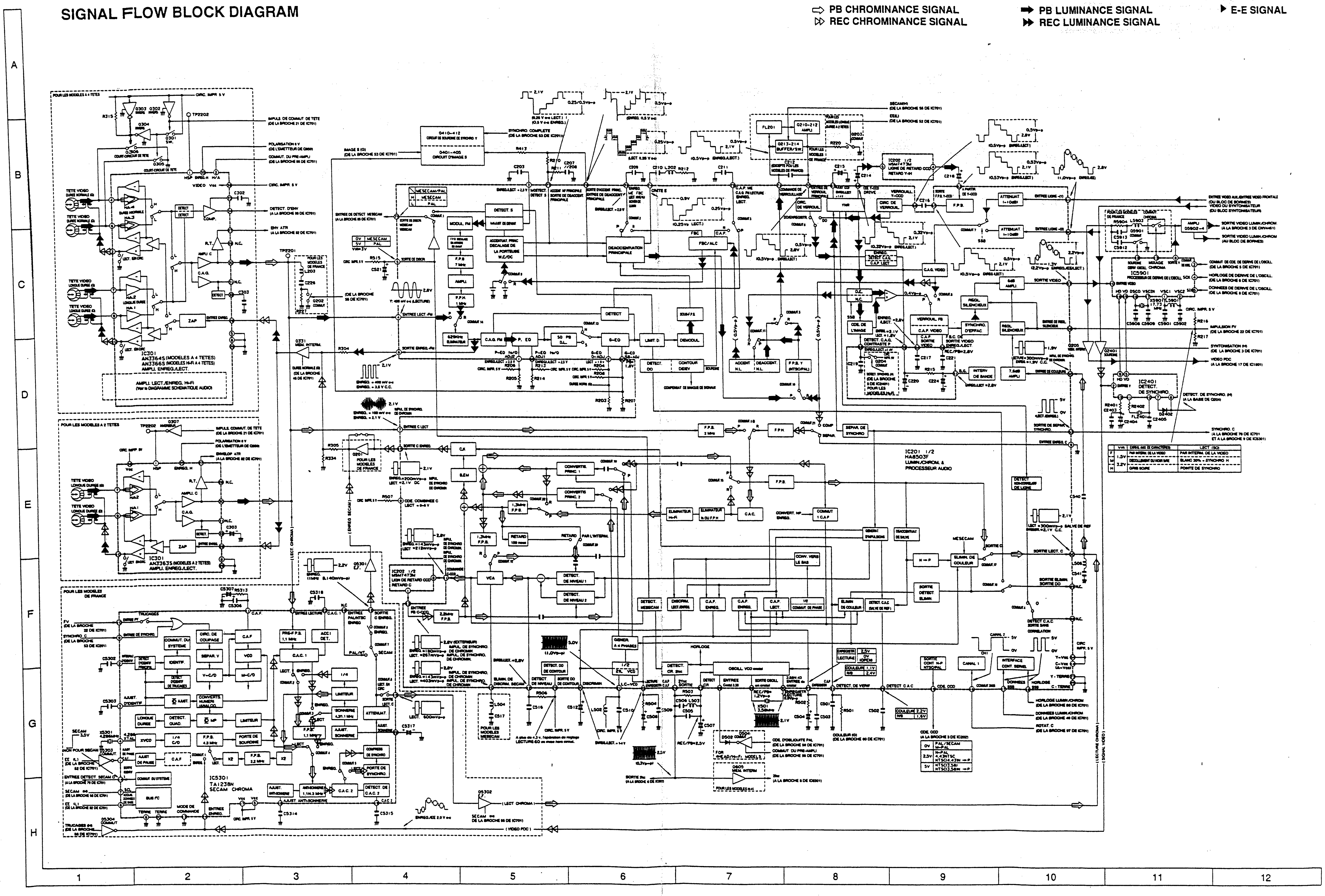
8. BLOCK DIAGRAMS

SERVO BLOCK DIAGRAM


SIGNAL GENERAT D'IMPULS DU TAMBOUR
SIGNAL GENERAT DE FREQ DU TAMBOUR
SIGNAL GENERAT DE FREQ DU CABESTAN
CDE. DU GAIN D'AMPLIF
CDE. TPZ
CDE. TERRE
C.A.G.
AMPLI. 20 dB
TP701
LECT H 25Hz(SP) V 2.0Vp-p
PROCESSEUR DE SIGNAUX DE COMMANDE
DETECT DU MODE D'ENREG
MINUTEUR 1
MINUTEUR 2
ENREG. 2.5 V
RECHARGE 2.5 V
TETE D'ASSERVISSEMENT
POUR LES MODELES A-COPIE
TETE DE CDE. (-)
TETE DE CDE. (+)
CDE. ENREG. GENERAT D'ONDES TRAPEZOIDALES
CDE. DE CHANG. D'ECRITURE
SORTIE DE SYNCHRO
PROCESSEUR D'ENTREE DE SYNCHRO V
PROCESSEUR DE SIGNAUX DE SYNCHRO V
ENTREE VSYA
FROM DE LA BROCHE 29 DE IC701
LECT./ENREG.
H 780 Hz (DUREE NORM.) V 5 Vo-o
PB/REC H 600 Hz V 5 V o-o
GENER. FREQ. DU TAMBOUR
ENTREE GENER. D'IMPUL. C
ENTREE AMPLI. GENER. FREQ. D
AMPLI. DU SIGNAL DU GENER. DE FREQ. OU CABESTAN
CAPTAGE D'ENTREE
PROCESSEUR DE SIGNAUX DU GENER DE FREQ. DU CABESTAN
CDE. DE VITESSE DU CABESTAN
DEBORDEMENT
CDE. DE VITESSE DU CABESTAN
CDE. DE PHASE DU CABESTAN
GENER. D'IMPUL. TAMBOUR
ENTREE GENER. D'IMPULS. D
PROCESSEUR D'ENTREE DE SIGNAUX GENER. FREQ./ GENER IMPUL. DU TAMBOUR
PROCESSEUR DU GENER DE SIGNAUX HSW
GENER. DE SYNCHRO Y DE FONCT. INTEMPESTIF
PROCESSEUR DE SIGNAUX DU GENER DE FREQ. DU TAMBOUR
PREAMPLIFICATEUR CDE. DE ROTATION
CDE. DE VITESSE DU TAMBOUR
CDE. DE VITESSE DU TAMBOUR
CDE. DE PHASE DU TAMBOUR
SIGNAUX DE RAYONS INFRA-ROUGES
RECEPTEUR R/C RMC5601
IMPULSION R/C
IC701 CONTROLEUR DU SYSTEME ET SERVO-PROCESSEUR
X702 10MHz
X701 32kHz
FILTRE R742-743 C739-742
SYNCHRO C (A LA BROCHE 53 DE IC201)
REF V 2.5 V
M 12/18V
ALIGN AUTO 5 V
LIMIT D'INTENSITE DE COURANT
INVERS. DU CABESTAN (H)
COMMANDE DU CABESTAN
IC708 1/2 AMPLI. D'ERREUR DU CABESTAN
COMMUT. DE GAIN C
COMMANDE DU TAMBOUR
IC705 1/2 AMPLI. D'ERREUR DU TAMBOUR
UNITE DU MOTEUR DU CABESTAN
AMPLI DU GENER. DE FREQ
TETE DU GENER. DE FREQ.
PRE-EXCITATEUR
UNITE DU MOTEUR DU TAMBOUR
IC7701 EXCITATEUR DU MOTEUR DE CHARGE
MOTEUR DE CHARGE (+)
MOTEUR DE CHARGE (-)
MOTEUR DE CHARGE
DETECT. D'ACHEVEM.
DETECT. DE DEMARR.
ALIGNEMENT E²PROM 1 024 bits
REGISTRE DE DONNEES
REGISTRE D'ADRESSE ASSERVIES/MOTS
DECODEUR D'ADRESSES
CIRCUIT DE COMMANDE
IC703 E²PROM
IC5001 UPD16312 CONTROLEUR/EXCITATEUR DU TUBE D'AFFICHAGE FLUORESCENT
DONNEES D'INSTRUCTIONS
CIRCUIT DE SYNCHRONISATION
OSCILLATEUR
INTERFACE DE SERIE
MEMOIRE DES DONNEES INDICATIVES
EXPLORATION DE CLES D'ACCES OU GENER. DE SYNCHRO.
MEMOIRE DE L'AFFICHAGE
SELECTEUR DE DONNEES
EXCITATEUR DE GRILLE
EXCITATEUR DE COMBINAISON
EXCITATEUR DE SEGMENTS
TUBE D'AFFICHAGE FLUORESCENT
MATRICE DE TOUCHES
A B C D E F G H
1 2 3 4 5 6 7 8 9 10 11 12

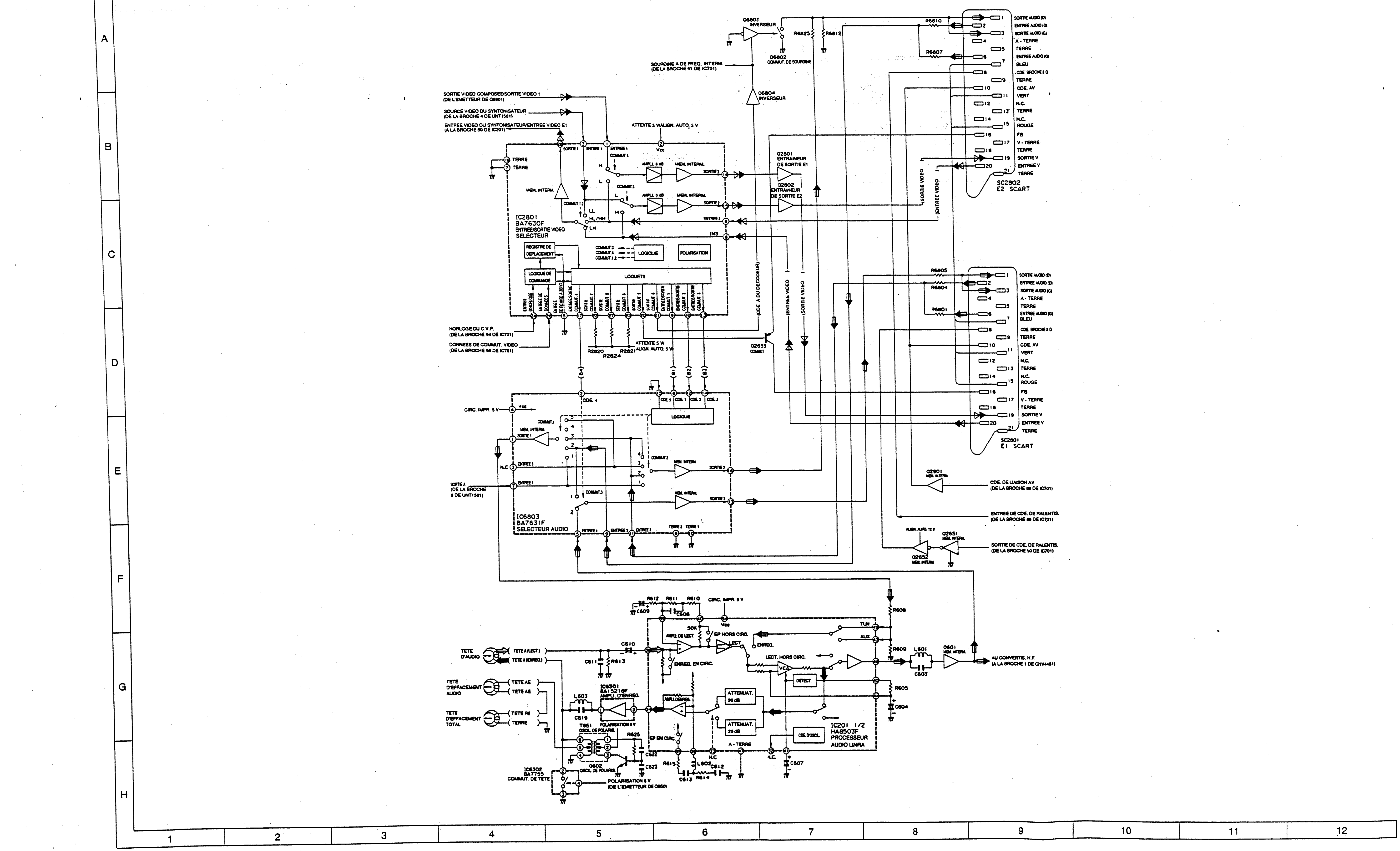
SIGNAL FLOW BLOCK DIAGRAM

⇨ PB CHROMINANCE SIGNAL
⇨ REC CHROMINANCE SIGNAL
➡ PB LUMINANCE SIGNAL
⏩ REC LUMINANCE SIGNAL
▶ E-E SIGNAL

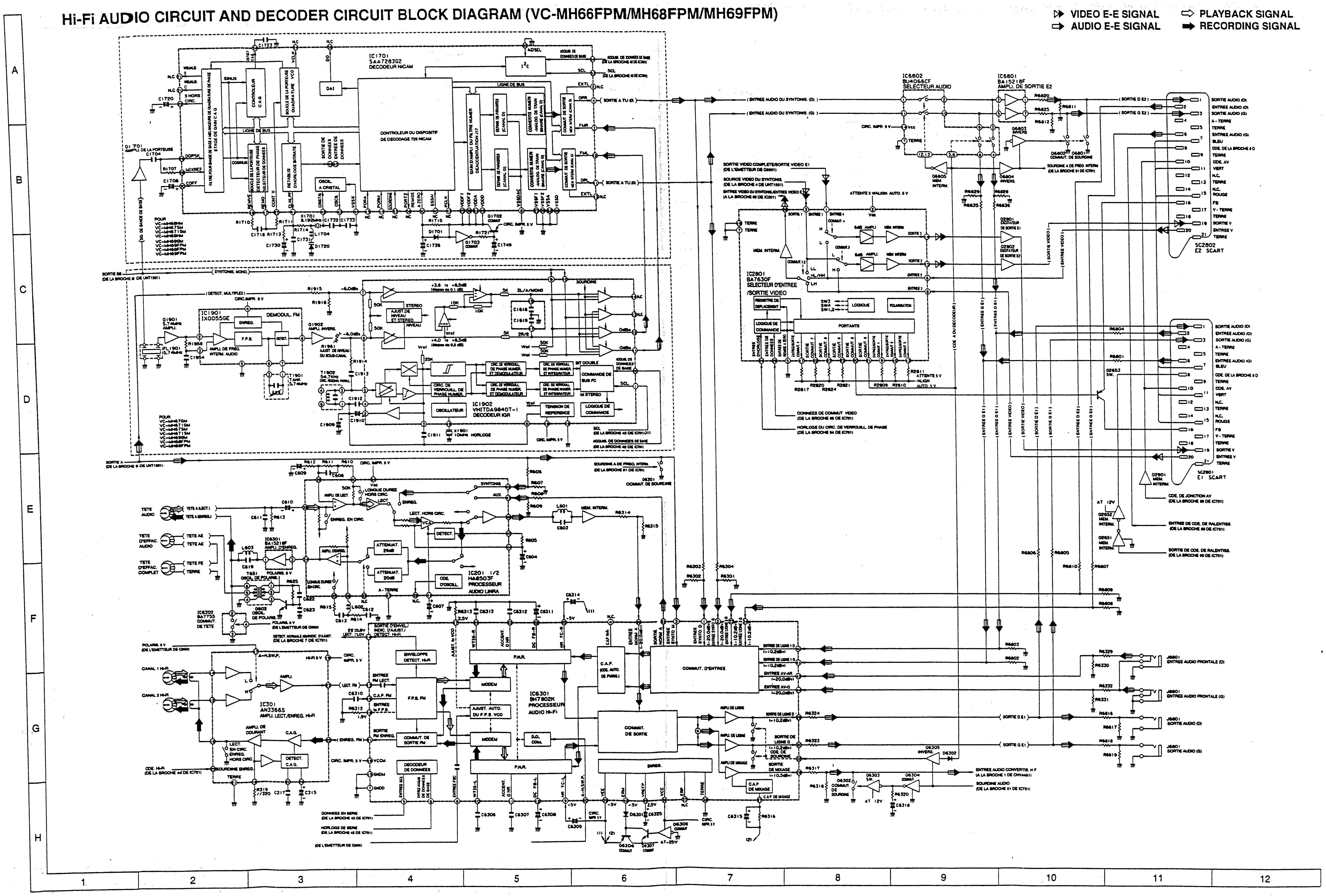

A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12
POUR LES MODELES A 4 TETES
POUR LES MODELES A 2 TETES
POUR LES MODELES DE FRANCE
TETE VIDEO
IC301
AN3364S (MODELES A 4 TETES)
AN3366S (MODELES Hi-Fi A 4 TETES)
AMPLI. ENREG./LECT.
AMPLI. LECT./ENREG. Hi-Fi
IC301
AN3363S (MODELES A 2 TETES)
AMPLI. ENREG./LECT.
ZAP
C.A.G.
COMP.
TP2201
TP2202
IC5301
TA1238N
SECAM CHROMA
IC201 1/2
HA8503F
LUMIN./CHROM. &
PROCESSEUR AUDIO
IC202 1/2
MSM7473M
LIGNE DE RETARD CCD
RETARD C
IC5901
IC2401
DETECT.
DE SYNCHRO
VCA
DETECT. S
DESACCENTUATION PRINCIPALE
FBC/ALC
LIMIT. D
DEMODUL.
VERROUILL.
AMPLI
SORTIE VIDEO
ENTREE LECT.-FM
SORTIE ENREG.-FM
ENTREE C LECT.
SORTIE LECT. C
(LECT. CHROMA)
(VIDEO PDC)
(SIGNAL VIDEO)

AUDIO CIRCUIT AND DECODER CIRCUIT BLOCK DIAGRAM (VC-M29FPM/M49FPM)

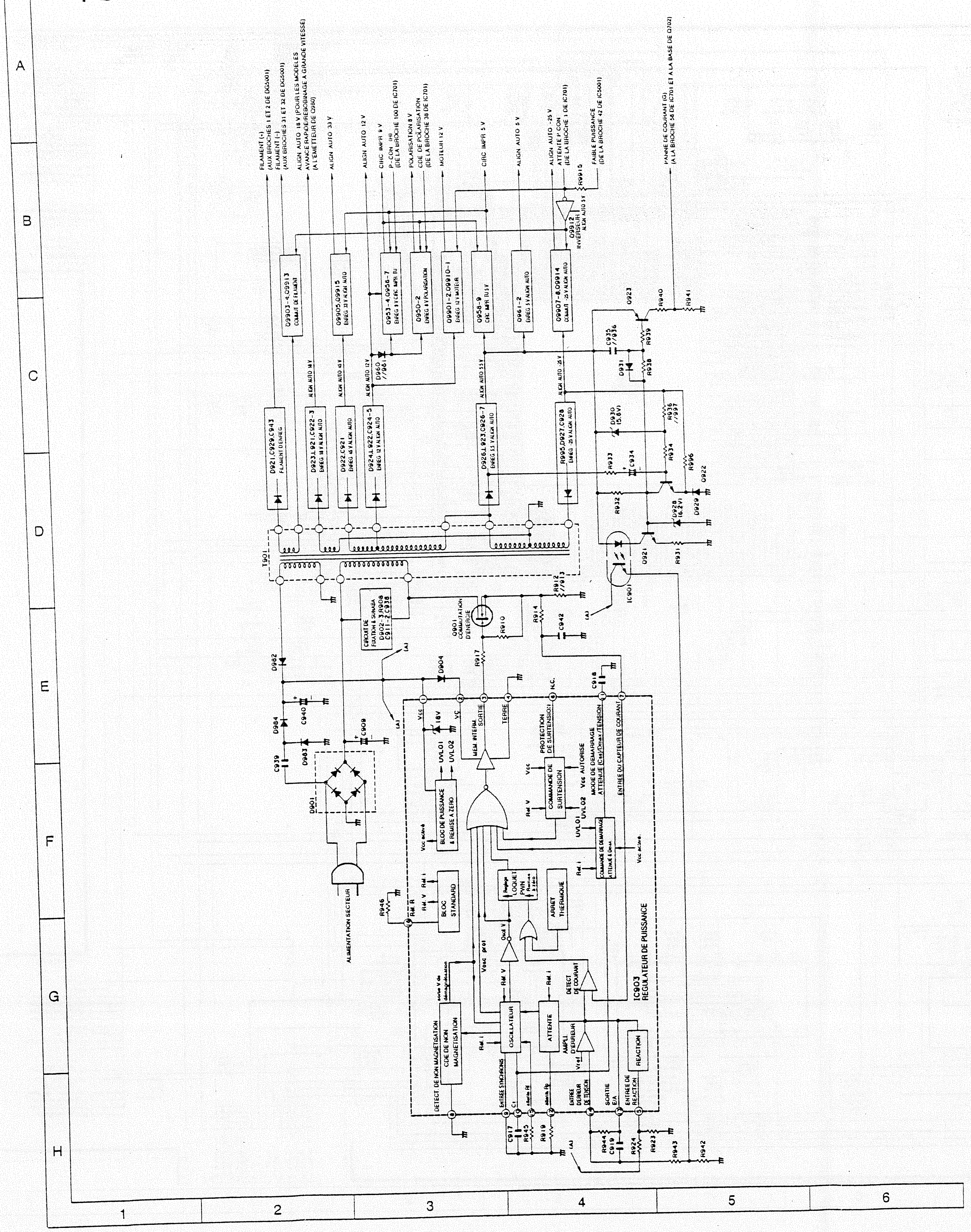
▷▶ VIDEO E-E SIGNAL
⇨ AUDIO E-E SIGNAL
⇨ PLAYBACK SIGNAL
➡ RECORDING SIGNAL


A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12
Q6803 INVERSEUR
R6825
R6812
Q6802 COMMUT. DE SOURDINE
SOURDINE A DE FREQ. INTERM. (DE LA BROCHE 91 DE IC701)
Q6804 INVERSEUR
SORTIE VIDEO COMPOSEE/SORTIE VIDEO 1 (DE L'EMETTEUR DE Q5901)
SOURCE VIDEO DU SYNTONISATEUR (DE LA BROCHE 4 DE UNT1501)
ENTREE VIDEO DU SYNTONISATEUR/ENTREE VIDEO E1 (A LA BROCHE 60 DE IC201)
ATTENTE 5 V/ALIGN. AUTO. 5 V
SORTIE 1
ENTREE 1
ENTREE 4
COMMUT 4
Vcc
TERRE
TERRE
H
L
AMPLI. 6 dB
MEM. INTERM.
SORTIE 1
COMMUT 3
SORTIE 2
MEM. INTERM.
COMMUT. 1 2
LL
HL/HH
LH
ENTREE 2
IN3
IC2801
BA7630F
ENTREE/SORTIE VIDEO
SELECTEUR
REGISTRE DE DEPLACEMENT
LOGIQUE DE COMMANDE
COMMUT 3
COMMUT 4
COMMUT 1 2
LOGIQUE
POLARISATION
LOQUETS
ENTREE D'HORLOGE
ENTREE DE DONNEES
ENTREE DE REMISE A ZERO
ENTREE/SORTIE COMMUT. 4
SORTIE COMMUT. 7
SORTIE COMMUT. 8
SORTIE COMMUT. 6
SORTIE COMMUT. 5
SORTIE COMMUT. 6
ENTREE/SORTIE COMMUT. 1
ENTREE/SORTIE COMMUT. 2
ENTREE/SORTIE COMMUT. 3
Q2801 ENTRAINEUR DE SORTIE E1
Q2802 ENTRAINEUR DE SORTIE E2
HORLOGE DU C.V.P. (DE LA BROCHE 94 DE IC701)
DONNEES DE COMMUT. VIDEO (DE LA BROCHE 96 DE IC701)
R2820
R2824
R2821
ATTENTE 5 V/ALIGN. AUTO. 5 V
Q2653 COMMUT
(CDE. A DU DECODEUR)
(ENTREE VIDEO)
(SORTIE VIDEO)
(B4)
(B1)
(B2)
(B3)
R6810
R6807
SORTIE AUDIO (D)
ENTREE AUDIO (D)
SORTIE AUDIO (G)
A - TERRE
TERRE
ENTREE AUDIO (G)
BLEU
CDE. BROCHE 8 0
TERRE
CDE. AV
VERT
N.C.
TERRE
N.C.
ROUGE
FB
V - TERRE
TERRE
SORTIE V
ENTREE V
TERRE
SC2802
E2 SCART
R6805
R6804
R6801
SC2801
E1 SCART
CIRC. IMPR. 5 V
CDE. 4
CDE. 5
CDE. 1
CDE. 2
CDE. 3
LOGIQUE
COMMUT 1
MEM. INTERM.
SORTIE 1
N.C
ENTREE 5
SORTIE A (DE LA BROCHE 9 DE UNT1501)
ENTREE 1
COMMUT 2
COMMUT 3
SORTIE 2
SORTIE 3
IC6803
BA7631F
SELECTEUR AUDIO
ENTREE 4
ENTREE 2
ENTREE 3
TERRE 2
TERRE 1
Q2901 MEM. INTERM.
CDE. DE LIAISON AV (DE LA BROCHE 89 DE IC701)
ENTREE DE CDE. DE RALENTIS. (DE LA BROCHE 88 DE IC701)
ALIGN. AUTO. 12 V
Q2651 MEM. INTERM.
Q2652 MEM. INTERM.
SORTIE DE CDE. DE RALENTIS. (DE LA BROCHE 90 DE IC701)
R612
R611
R610
CIRC. IMPR. 5 V
C609
C608
R608
Vcc
50K
AMPLI. DE LECT.
EP HORS CIRC.
LECT.
ENREG.
TUN
AUX
TETE D'AUDIO
TETE A (LECT.)
TETE A (ENREG.)
C610
C611
R613
ENREG. EN CIRC.
LECT. HORS CIRC.
VCA
DETECT.
R609
L601
C603
Q601 MEM. INTERM.
AU CONVERTIS. H.F. (A LA BROCHE 1 DE CNV4461)
TETE D'EFFACEMENT AUDIO
TETE AE
TETE AE
TETE D'EFFACEMENT TOTAL
TETE FE
TERRE
L603
C619
IC6301
BA15218F
AMPLI. D'ENREG.
AMPLI. D'ENREG.
ATTENUAT. 26 dB
ATTENUAT. 20 dB
R605
C604
T651
OSCIL. DE POLARIS.
POLARISATION 8 V
R625
EP EN CIRC.
C622
C623
Q602 OSCIL. DE POLARIS.
A - TERRE
N.C
N.C.
CDE. D'OSCIL.
IC201 1/2
HA8503F
PROCESSEUR AUDIO LINRA
C607
R615
L602
C612
C613
R614
IC6302
BA7755
COMMUT. DE TETE
POLARISATION 8 V (DE L'EMETTEUR DE Q950)

Hi-Fi AUDIO CIRCUIT AND DECODER CIRCUIT BLOCK DIAGRAM (VC-MH66FPM/MH68FPM/MH69FPM)


VIDEO E-E SIGNAL
AUDIO E-E SIGNAL
PLAYBACK SIGNAL
RECORDING SIGNAL
IC1701
SAA7283G2
DECODEUR NICAM
CONTROLEUR DU DISPOSITIF DE DECODAGE 728 NICAM
LIGNE DE BUS
I²C
DAI
OSCIL. A CRISTAL
X1701 6.192MHz
IC1901
IX0055GE
DEMODUL. FM
Q1901 5.74MHz AMPLI.
IFL1901 5.74MHz
Q1902 AMPLI. INVERS.
T1902 54.7KHz
T1901 7.4MHz
IC1902
VHITDA9840T-1
DECODEUR IGR
X1901 10MHz HORLOGE
OSCILLATEUR
TENSION DE REFERENCE
LOGIQUE DE COMMANDE
COMMANDE DE BUS I²C
STEREO
SOURDINE
IC6802
BU4066CF
SELECTEUR AUDIO
IC6801
BA15218F
AMPLI. DE SORTIE E2
IC2801
BA7630F
SELECTEUR D'ENTREE /SORTIE VIDEO
LOGIQUE
PORTANTS
SC2802
E2 SCART
SC2801
E1 SCART
Q2801 MEM. INTERM.
TETE AUDIO
TETE D'EFFAC. AUDIO
TETE D'EFFAC. COMPLET
IC6301
BA15218F
AMPLI. D'ENREG.
IC6302
BA7755
COMMUT. DE TETE
IC201 1/2
HA8503F
PROCESSEUR AUDIO LINRA
ATTENUAT. 26dB
ATTENUAT. 20dB
DETECT.
CDE. D'OSCILL.
CANAL 1 HI-FI
CANAL 2 HI-FI
IC301
AN3366S
AMPLI. LECT./ENREG. HI-FI
ENVELOPPE DETECT. HI-FI
F.P.B. FM
MODEM
F.N.R.
IC6301
BH7802K
PROCESSEUR AUDIO HI-FI
AJUST. AUTO. DU F.P.B. VCO
COMMUT. D'ENTREE
COMMUT. DE SORTIE
DECODEUR DE DONNEES
J6801 ENTREE AUDIO FRONTALE (D)
J6801 ENTREE AUDIO FRONTALE (G)
J6801 SORTIE AUDIO (D)
J6801 SORTIE AUDIO (G)
A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12

POWER CIRCUIT BLOCK DIAGRAM



SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE:
BE SURE TO USE GENUINE PARTS FOR SECURING THE SAFETY AND RELIABILITY OF THE SET.
PARTS MARKED WITH "⚠" AND PARTS SHADED (IN BLACK) ARE ESPECIALLY IMPORTANT FOR MAINTAINING THE SAFETY AND PROTECTING ABILITY OF THE SET.
BE SURE TO REPLACE THEM WITH PARTS OF SPECIFIED PART NUMBER.

SAFETY NOTES:
1. *DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACING PARTS.*
2. *SEMICONDUCTOR HEAT SINKS SHOULD BE REGARDED AS POTENTIOL SHOCK HAZARDS WHEN THE CHASSIS IS OPERATING.*

NOTES:
1. *The unit of resistance "ohm" is omitted (k=1000 ohm, M=1 Meg ohm).*
2. *All resistors are 1/8 watt, unless otherwise noted.*
3. *The unit of capacitance "F" is omitted (µ=µF, p=µµF).*
4. *The values in parentheses are the ones in the PB mode; the values without parentheses are the ones in the REC mode.*

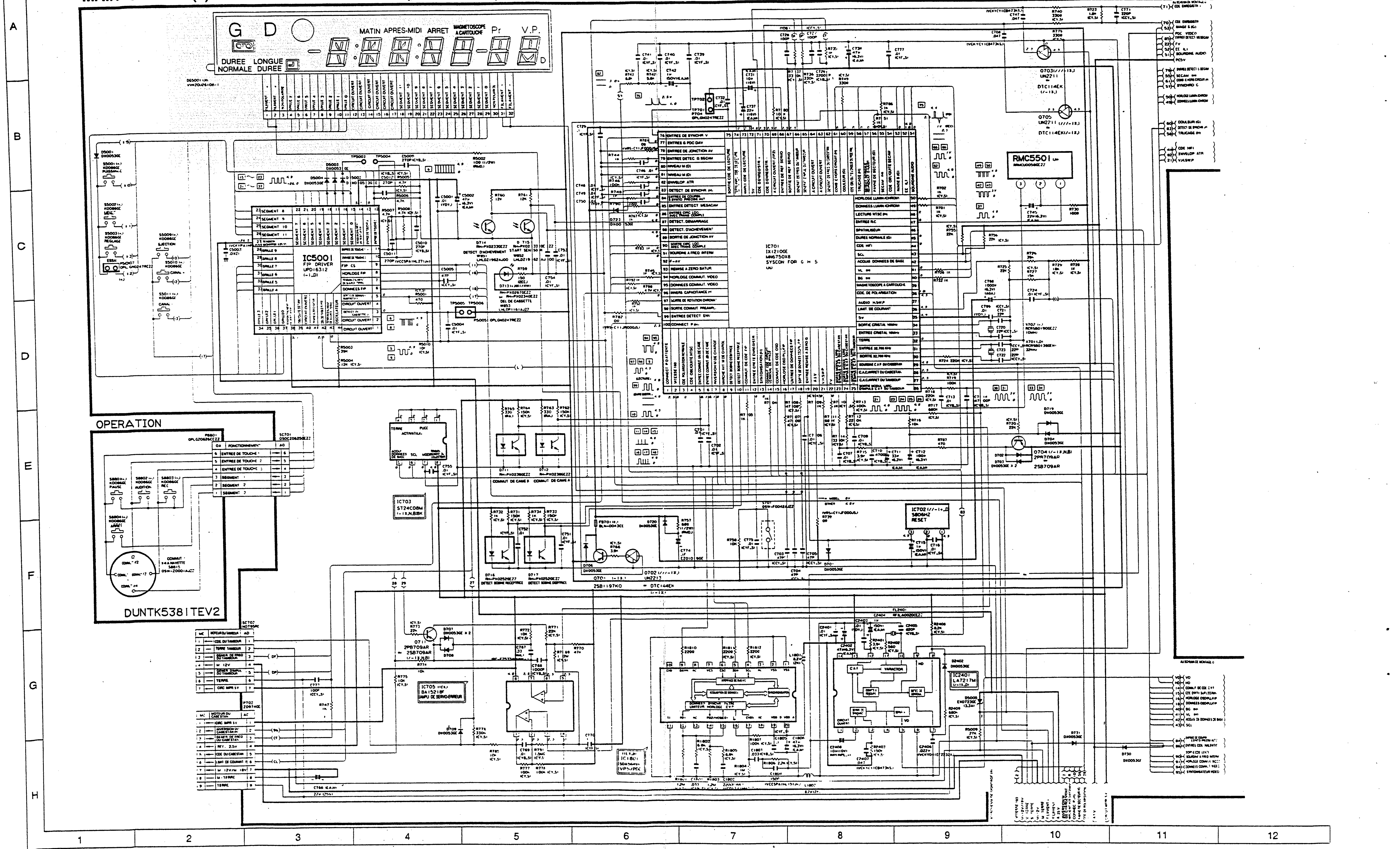
VOLTAGE MEASUREMENT CONDITIONS:
1. *DC voltages are measured between points indicated and chassis ground by VTVM, with AC230V/50Hz supplied to unit and all controls are set to normal viewing picture unless otherwise noted.*
2. *Voltages are measured with 10000µV B & W or colour noted.*

WAVEFORM MEASUREMENT CONDITIONS:
10000µV 87.5 percent modulated colour bar signal is fed into tuner.

CAUTION:
This circuit diagram is original one. Therefore there may be a slight difference from yours.

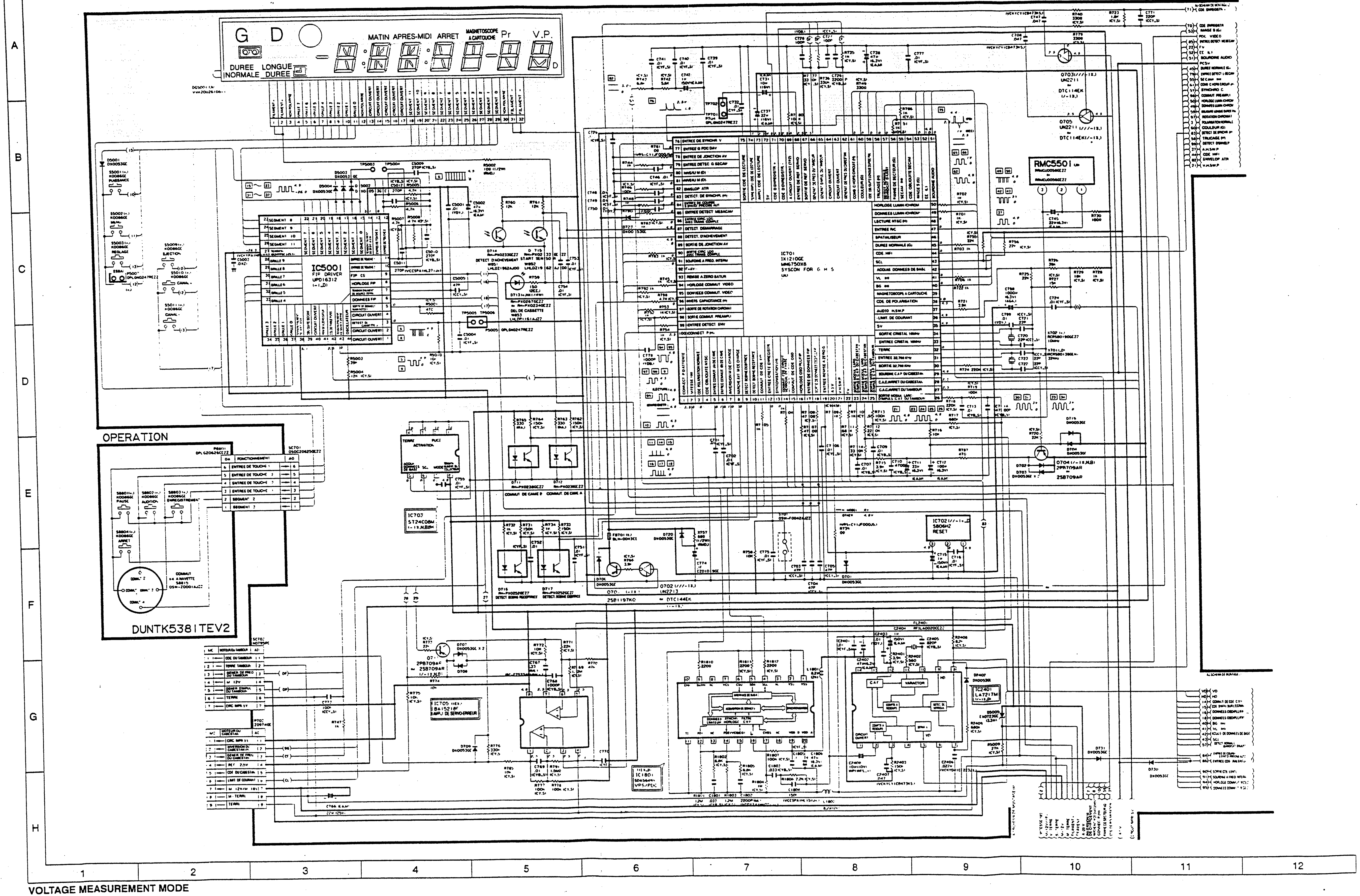
9. CIRCUIT DIAGRAM AND PWB FOIL PATTERN

MAIN CIRCUIT (1) AND OPERATION CIRCUIT (VC-M29FPM)


A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12
G D
MATIN APRES-MIDI ARRET
Pr
V.P.
DUREE NORMALE
LONGUE DUREE
IC5001
FIP DRIVER
UPD16312
IC701
IX1210GE
MN6750X8
SYSCON FOR G H S
RMC5501
OPERATION
DUNTK5381TEV2
IC703
ST24C08M
IC705
BA15218F
IC702
S806HZ
RESET
IC2401
LA7217M

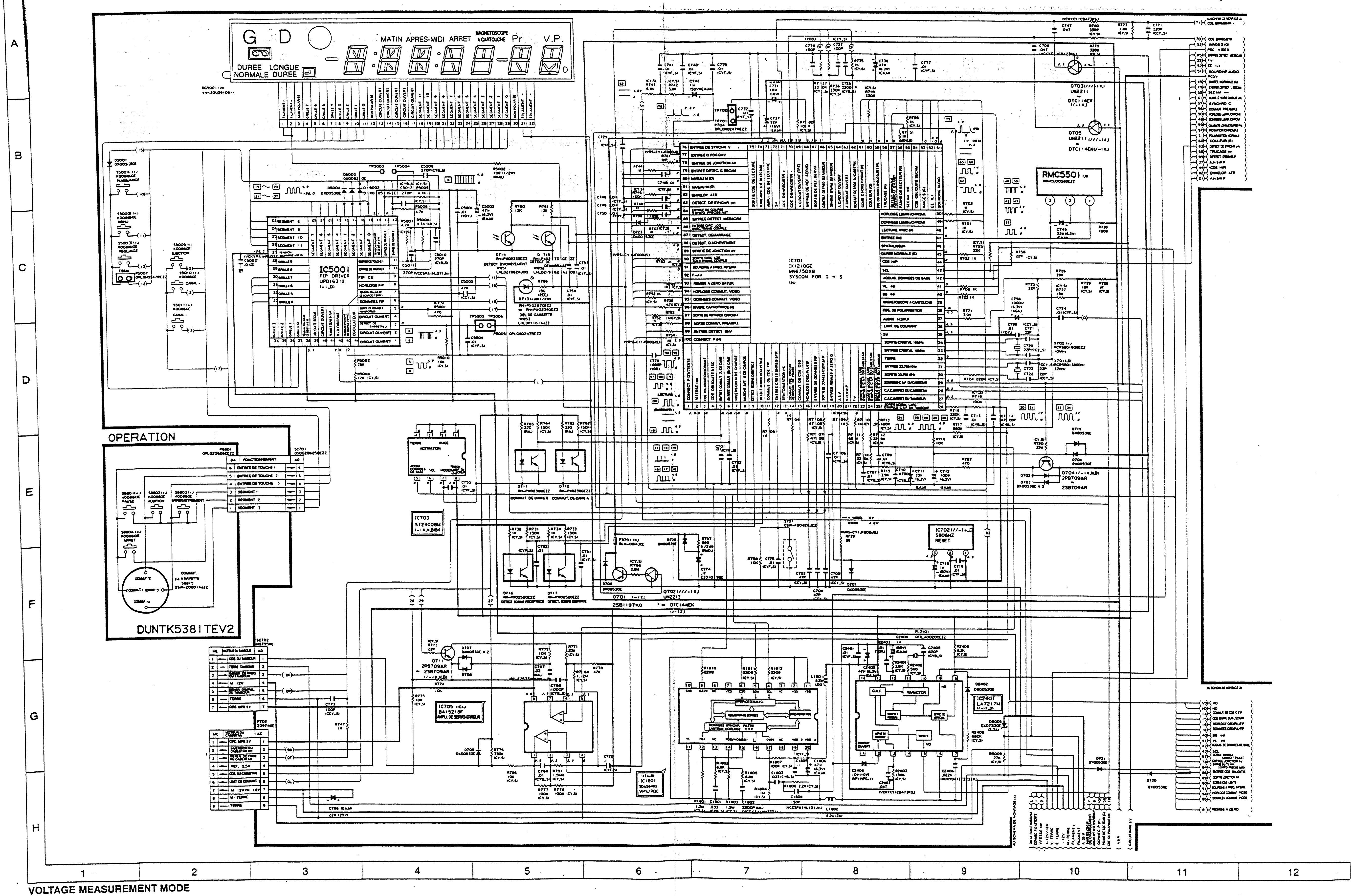
VOLTAGE MEASUREMENT MODE
PB . . . . . Parentheses ( )
REC . . . . . Without Parentheses

MAIN CIRCUIT (1) AND OPERATION CIRCUIT (VC-M49FPM/MH68FPM)


G D
MATIN APRES-MIDI ARRET
MAGNETOSCOPE A CARTOUCHE
Pr
V.P.
DUREE NORMALE
LONGUE DUREE
IC5001
FIP DRIVER
UPD16312
IC701
IX1210GE
SYSCON FOR G H S
RMC5501
OPERATION
DUNTK5381TEV2
IC703
ST24C08M
IC702
S80842
RESET
IC1705
BA15218F
AMPLI. DE SERVO-ERREUR
IC1801
VPS/PDC
IC2401
LA7217M
A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12

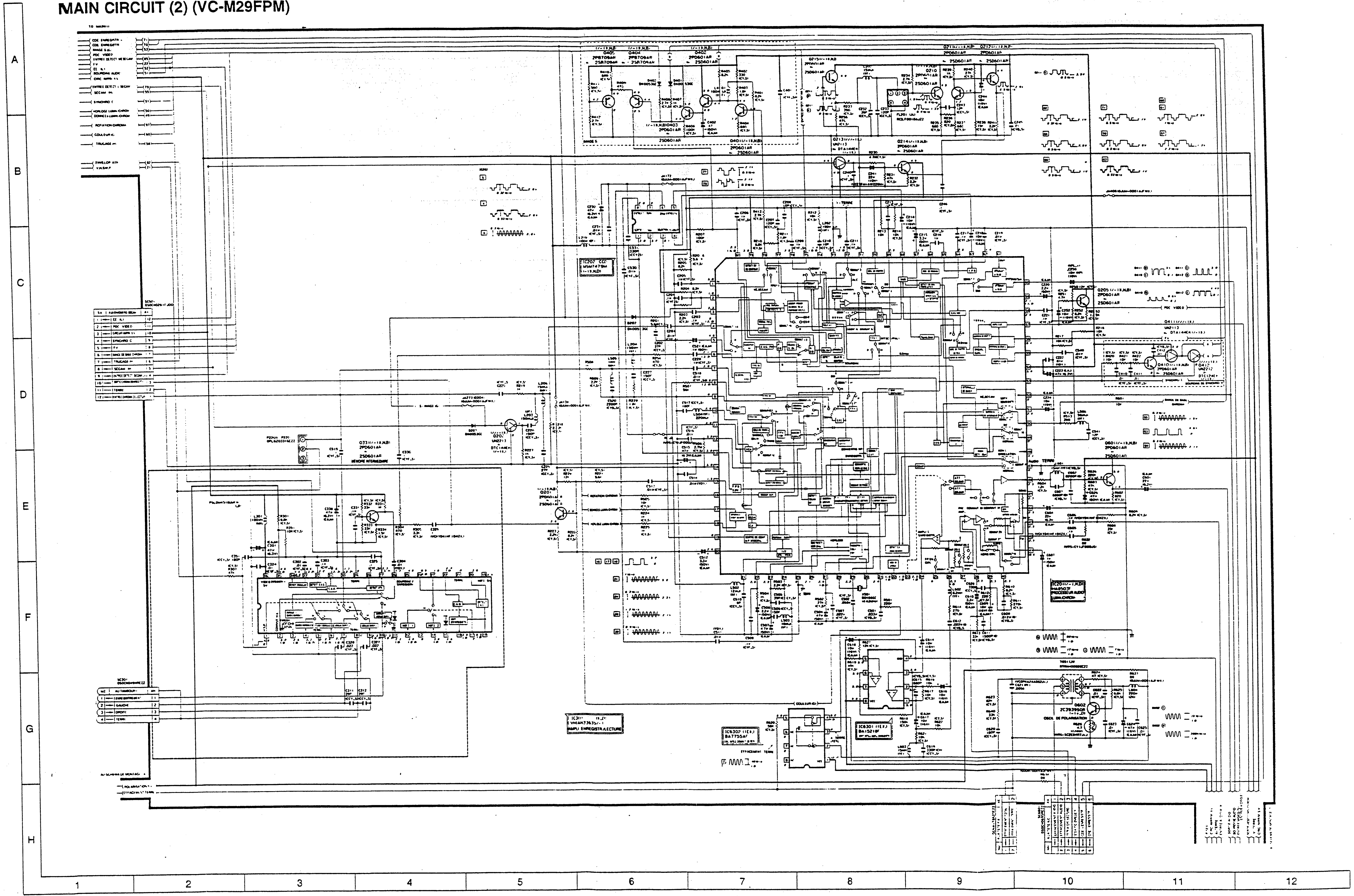
VOLTAGE MEASUREMENT MODE
PB . . . . . . Parentheses ( )
REC . . . . . Without Parentheses

MAIN CIRCUIT (1) AND OPERATION CIRCUIT (VC-MH69FPM)


A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12
G D
MATIN APRES-MIDI ARRET
MAGNETOSCOPE A CARTOUCHE
Pr
V.P.
DUREE LONGUE
NORMALE DUREE
IC5001
FIP DRIVER
UPD16312
IC701
IX1210GE
SYSCON FOR G H S
RMC5501
OPERATION
DUNTK5381TEV2
IC703
ST24C08M
IC705
BA15218F
AMPLI DE SERVO-ERREUR
IC1801
VPS/PDC
IC2401
LA7217M
IC702
S806HZ
RESET
Q701
2SB1197KQ
Q702
UN2213
DTC144EK
Q703
UN2211
DTC114EK
Q704
2PB709AR
2SB709AR
Q705
UN2211
DTC114EK
Q711
2PB709AR
2SB709AR

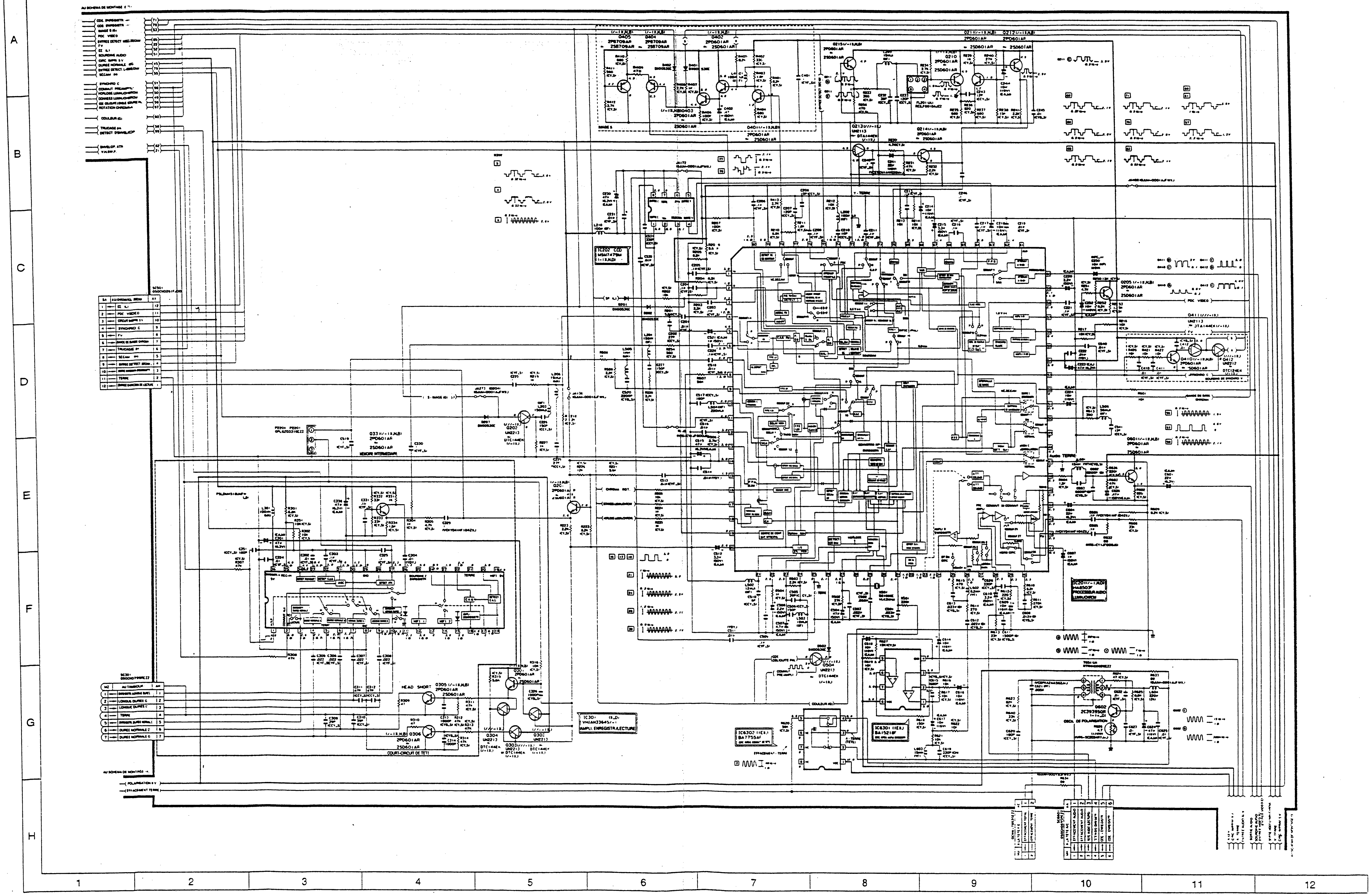
VOLTAGE MEASUREMENT MODE
PB...... Parentheses ( )
REC..... Without Parentheses

MAIN CIRCUIT (2) (VC-M29FPM)


A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12

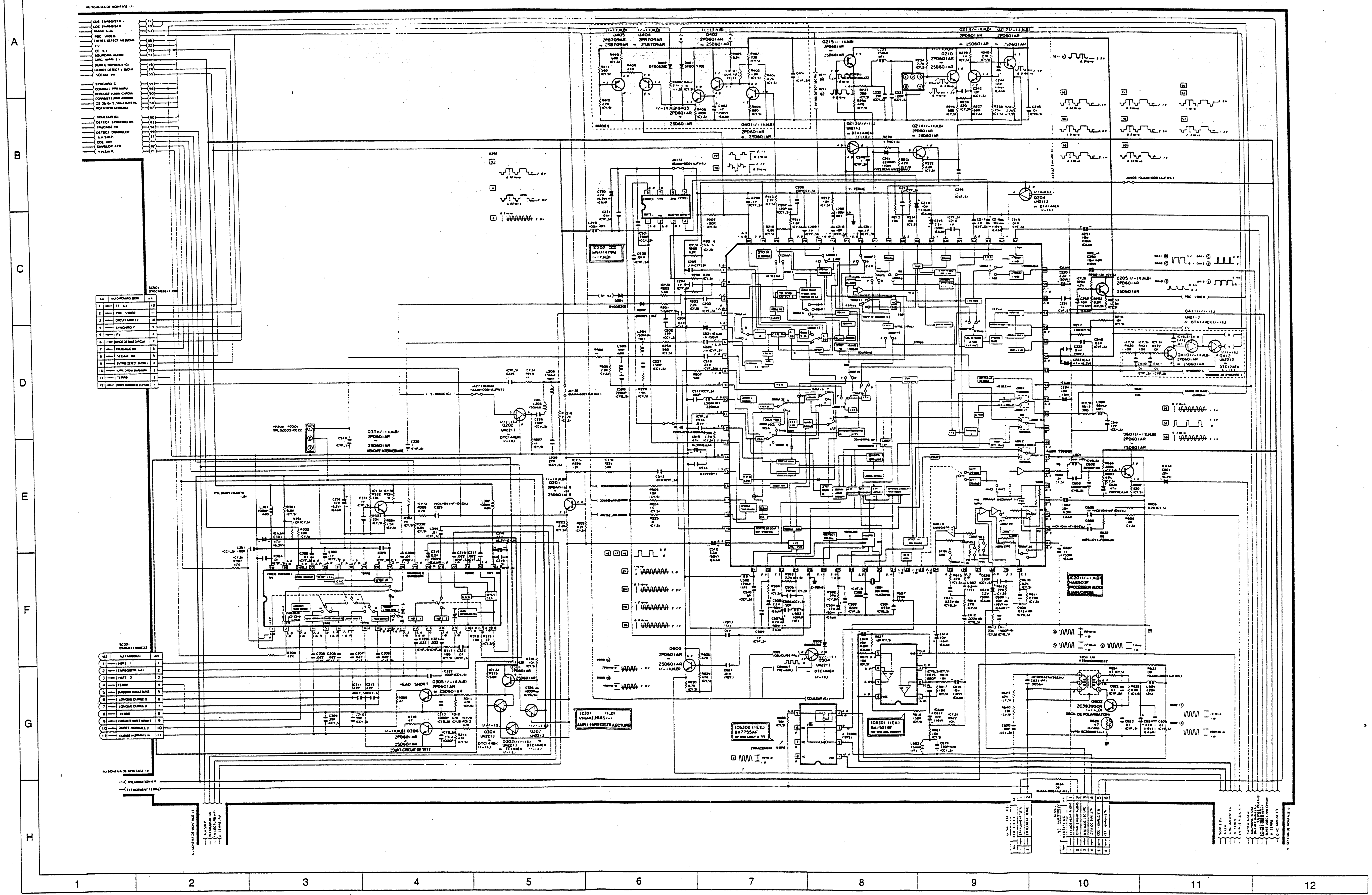
VOLTAGE MEASUREMENT MODE
PB . . . . . . Parentheses (   )
REC . . . . . Without Parentheses

MAIN CIRCUIT (2) (VC-M49FPM)


A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12
HEAD SHORT
IC201
IC301
IC6301
IC6302

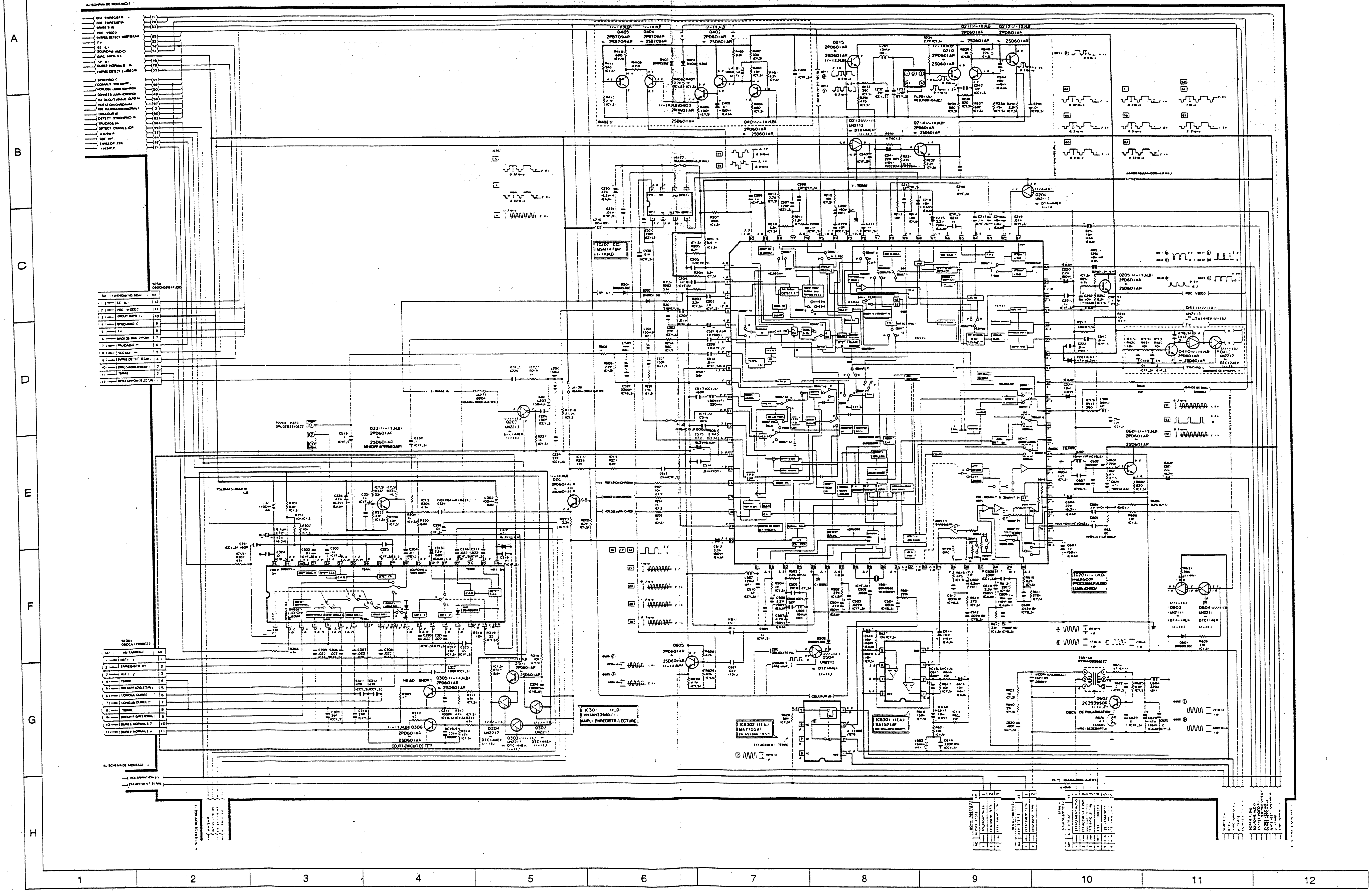
VOLTAGE MEASUREMENT MODE
PB . . . . . . Parentheses ( )
REC . . . . . Without Parentheses

MAIN CIRCUIT (2) (VC-M68FPM)


A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12
IC202 CCD
IC201 HA8503F PROCESSEUR AUDIO LUMINANCE/CHROMA
IC301 VHiAN3665/-1 AMPLI ENREGISTR.LECTURE
IC6302 BA7755AF
IC6301 BA15218F
Q602 2C3939SOR OSCIL DE POLARISATION
Q504 UN2213 DTC144EK
EFFACEMENT TERRE
COULEUR
HEAD SHORT
COURT-CIRCUIT DE TETE
TERRE

VOLTAGE MEASUREMENT MODE
PB...... Parentheses ( )
REC..... Without Parentheses

MAIN CIRCUIT (2) (VC-MH69FPM)


A
B
C
D
E
F
G
H
1
2
3
4
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7
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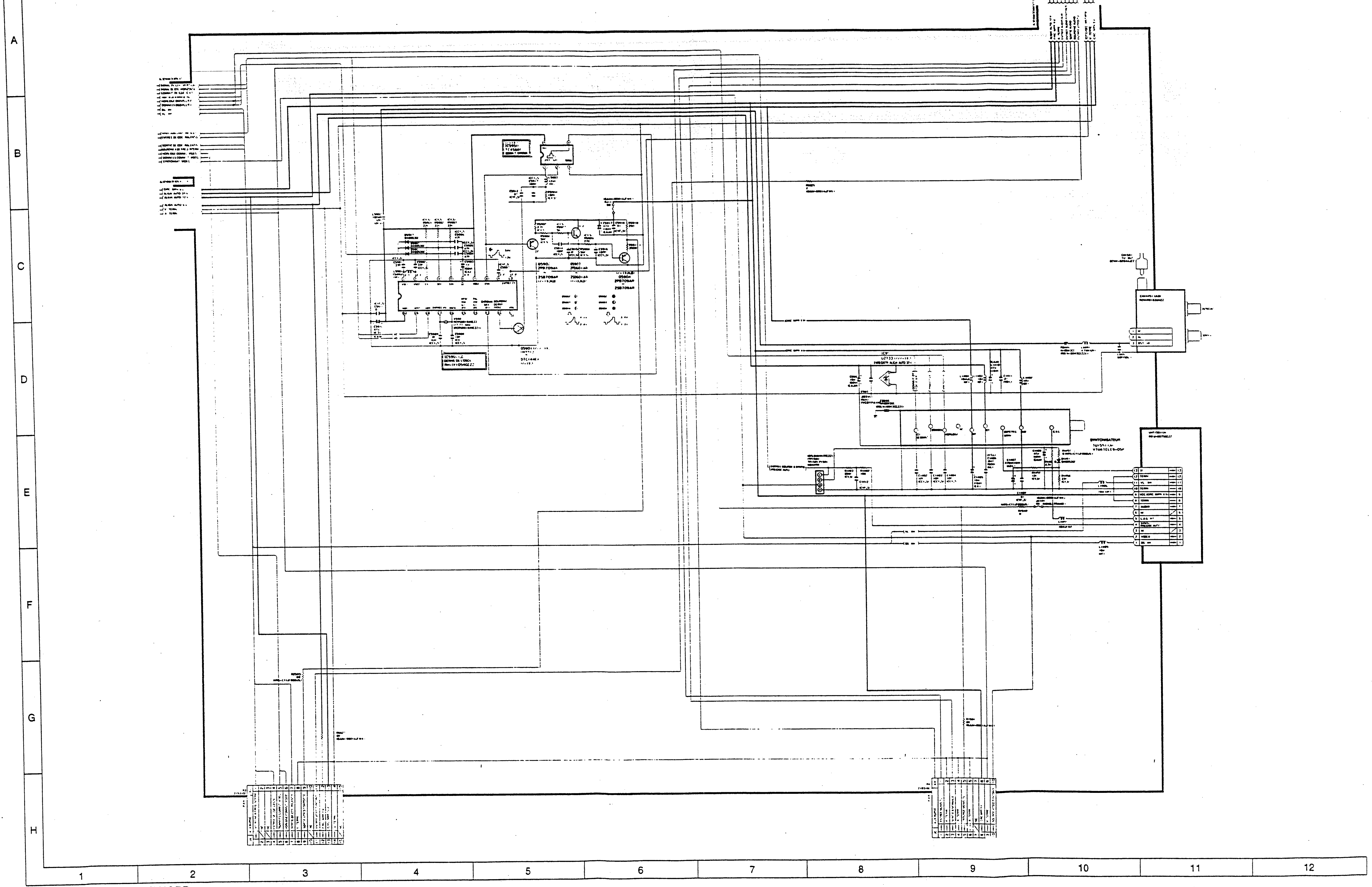
11
12

VOLTAGE MEASUREMENT MODE
PB . . . . . . Parentheses ( )
REC . . . . . Without Parentheses

MAIN CIRCUIT (3) (VC-M29FPM/M49FPM)


A
B
C
D
E
F
G
H
1
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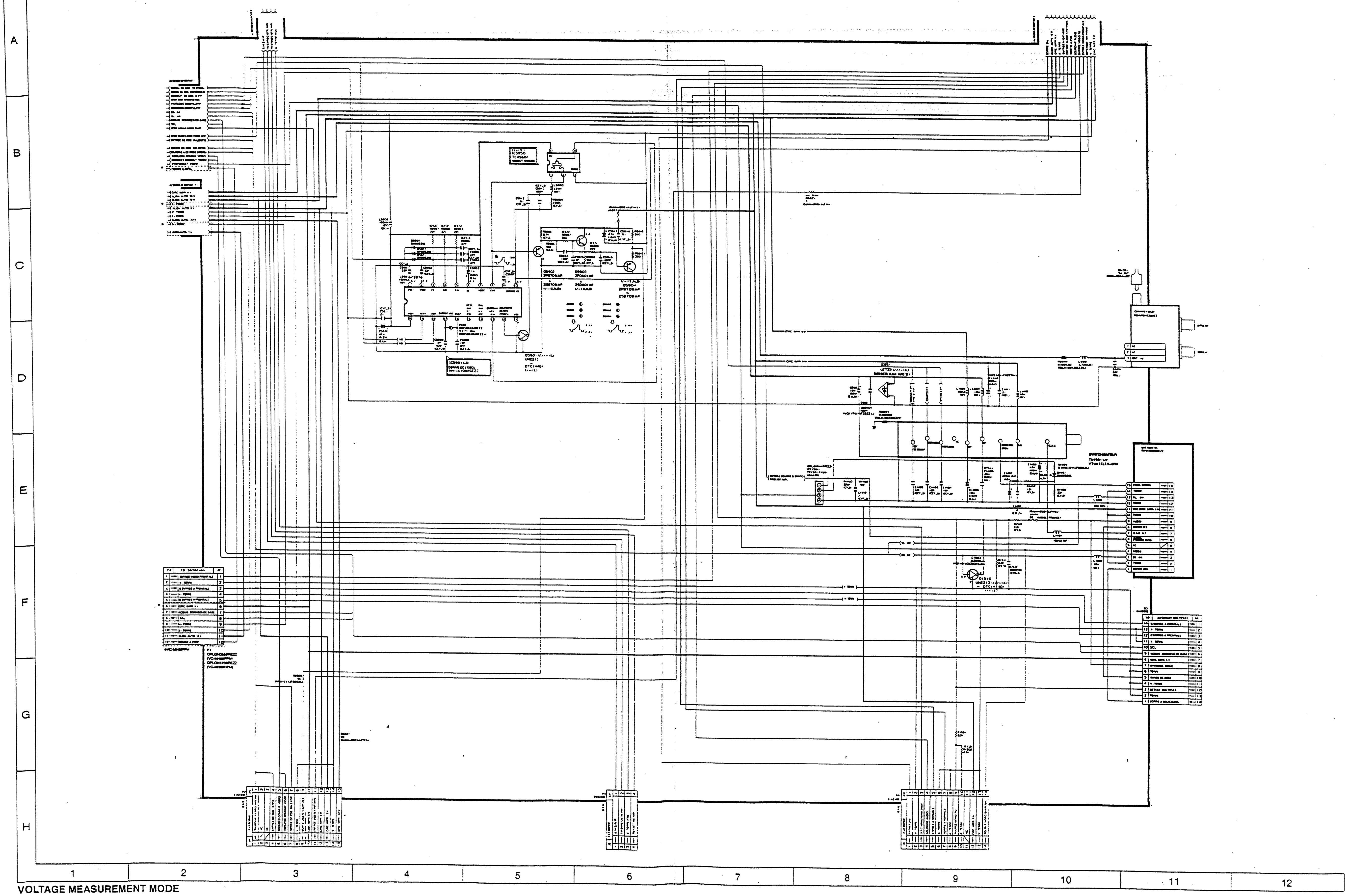
3
4
5
6
7
8
9
10
11
12
SYNTONISATEUR

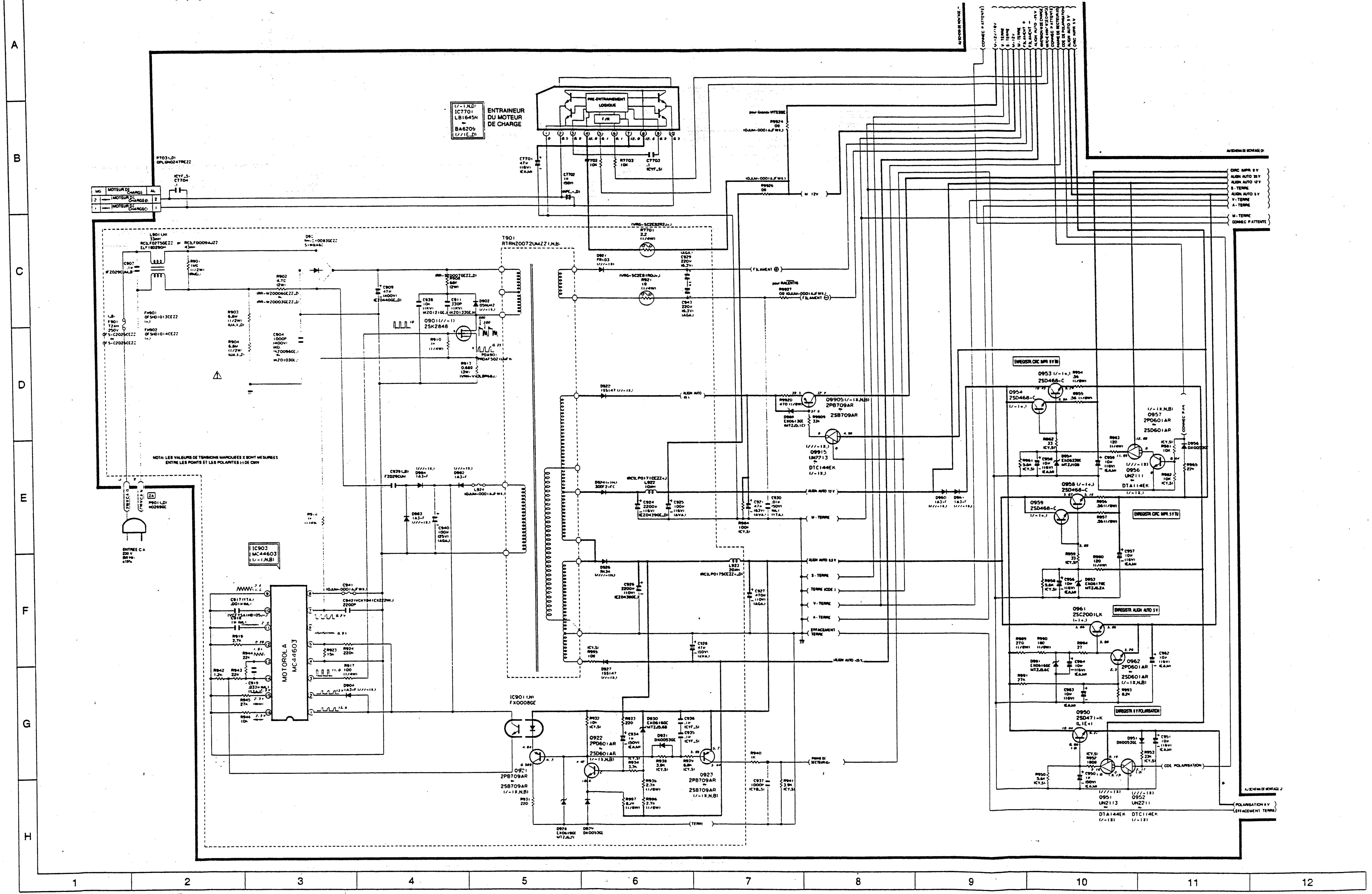
VOLTAGE MEASUREMENT MODE
PB . . . . . . Parentheses ( )
REC . . . . . Without Parentheses

MAIN CIRCUIT (3) (VC-MH68FPM/MH69FPM)


A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12
IC5950
TC4566F
IC5901
Q5902
2PB709AR
2SB709AR
Q5903
2PD601AR
2SD601AR
Q5904
2PB709AR
2SB709AR
Q5901
UN2213
DTC144EF

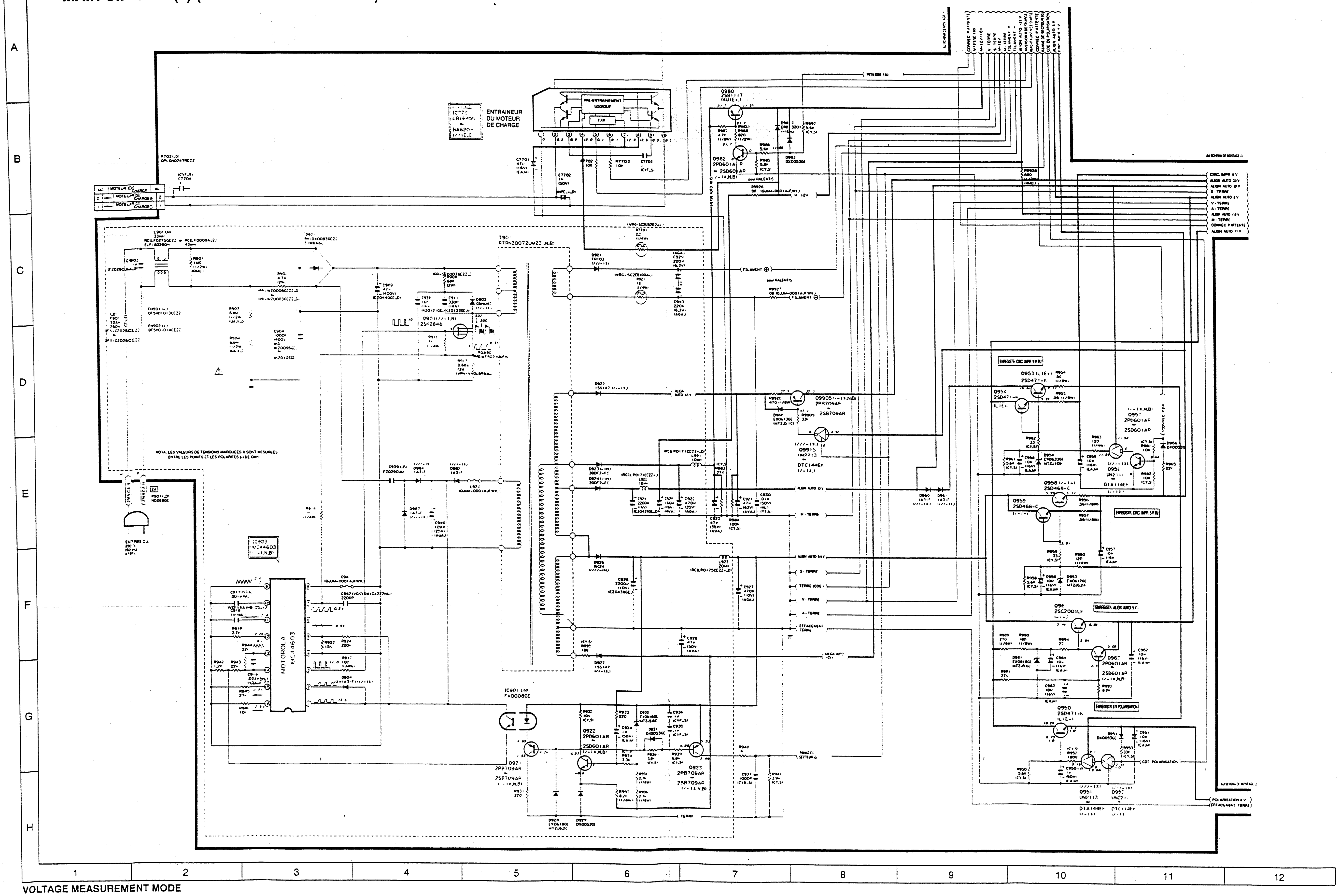
VOLTAGE MEASUREMENT MODE
PB . . . . . Parentheses ( )
REC . . . . Without Parentheses

MAIN CIRCUIT (4) (VC-M29FPM/M49FPM)


A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12
IC7701
LB1645N
BA6209
ENTRAINEUR DU MOTEUR DE CHARGE
PRE-ENTRAINEMENT LOGIQUE
F/R
MOTEUR DE CHARGE
T901
RTRNZ0072UMZZ
0901
2SK2848
IC903
MC44603
MOTOROLA MC44603
IC901
FX0008GE
0922
2PD601AR
2SD601AR
0921
2PB709AR
2SB709AR
0923
2PB709AR
2SB709AR
0990
2PB709AR
2SB709AR
0915
UN2713
DTC144EK
0953
2SD468-C
0954
2SD468-C
0957
2PD601AR
2SD601AR
0956
UN2111
DTA114EK
0958
2SD468-C
0959
2SD468-C
0961
2SC2001LK
0962
2PD601AR
2SD601AR
0950
2SD471-K
0951
UN2113
DTA144EK
0952
UN2211
DTC114EK
ENREGISTR. CIRC IMPR 5 V TR
ENREGISTR. CIRC IMPR 5 V TU
ENREGISTR. ALIGN AUTO 5 V
ENREGISTR. 5 V POLARISATION
FILAMENT
FILAMENT
ALIGN AUTO
ALIGN AUTO 12 V
M - TERRE
ALIGN AUTO 5.5 V
S - TERRE
TERRE (CDE)
V - TERRE
A - TERRE
EFFACEMENT TERRE
ALIGN AUTO -35 V
TERM
PANNE DE SECTEUR
CDE POLARISATION
POLARISATION 5 V
EFFACEMENT TERRE
M 12V
CIRC IMPR 5 V
ALIGN AUTO 35 V
ALIGN AUTO 12 V
S - TERRE
ALIGN AUTO 5 V
V - TERRE
A - TERRE
M - TERRE
CONNEC P ATTENTE
NOTA: LES VALEURS DE TENSIONS MARQUEES X SONT MESUREES ENTRE LES POINTS ET LES POLARITES (-) DE C909
ENTREE C.A
230 V
50 Hz
±10%
P901
F901
T2A
250V

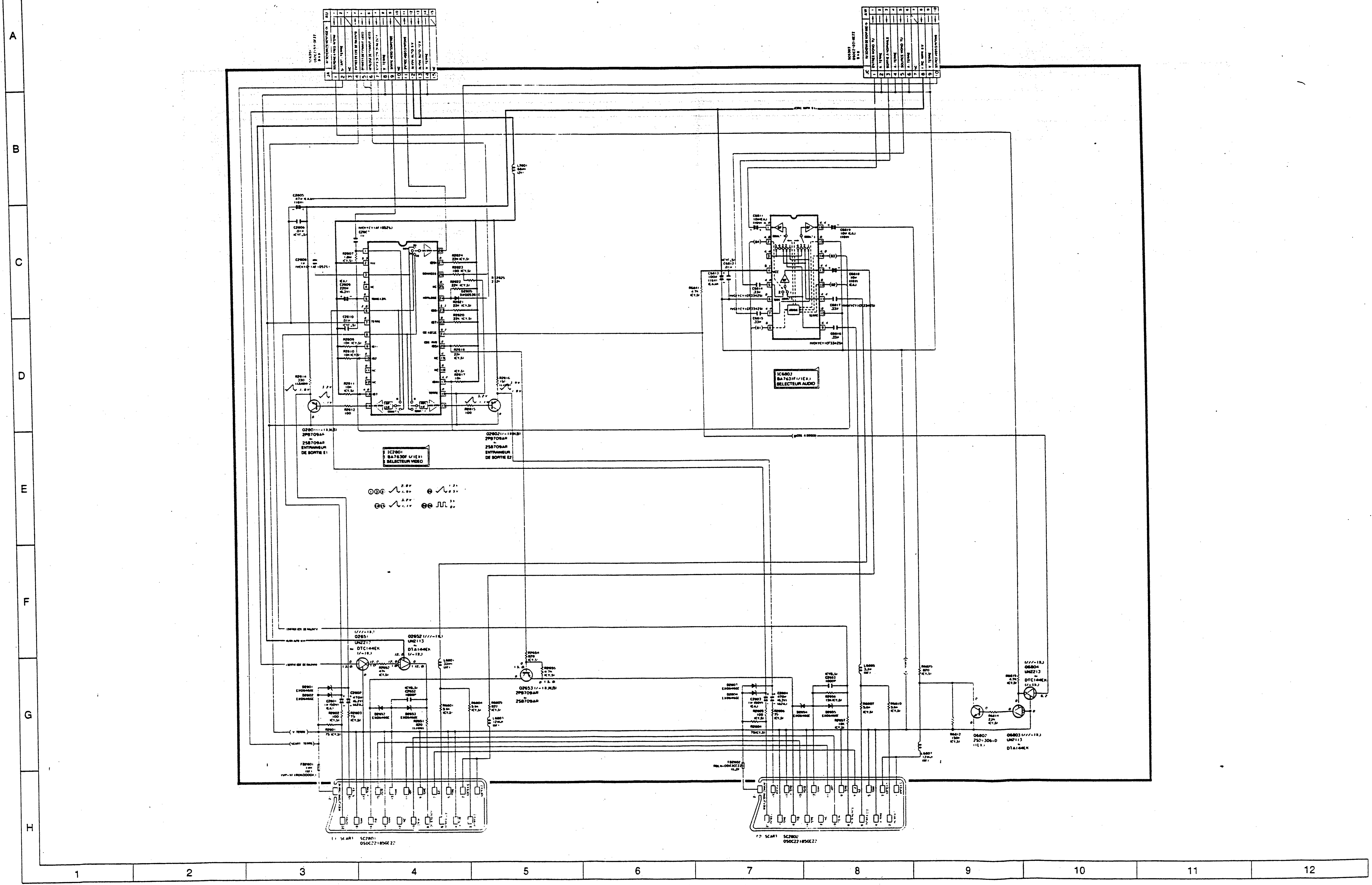
VOLTAGE MEASUREMENT MODE
PB . . . . . . Parentheses ( )
REC . . . . . Without Parentheses

MAIN CIRCUIT (4) (VC-MH68FPM/MH69FPM)


A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12
ENTRAINEUR DU MOTEUR DE CHARGE
PRE-ENTRAINEMENT
LOGIQUE
MOTEUR DE CHARGE
IC901
MC44603
MOTOROLA
T901
NOTA: LES VALEURS DE TENSIONS MARQUEES X SONT MESUREES ENTRE LES POINTS ET LES POLARITES (+) DE CIR+
ENTREE CA
FILAMENT ⊕
FILAMENT ⊖
M - TERRE
S - TERRE
V - TERRE
A - TERRE
EFFACEMENT TERRE
CDE POLARISATION
POLARISATION 6 V
EFFACEMENT TERRE
ENREGISTR. CIRC IMPR 5 V
ENREGISTR. ALIGN AUTO 5 V
ENREGISTR. 5 V POLARISATION
VITESSE
M - 12 V
Q980 2SB1117
Q982 2PD601AR
Q953
Q954
Q957
Q958
Q959
Q950
Q951
Q921 2PB709AR
Q922 2PD601AR
Q923 2PB709AR
Q901
2SK2846
Q990 2PB709AR
Q991 DTC144EK
IC901 FX0008CE

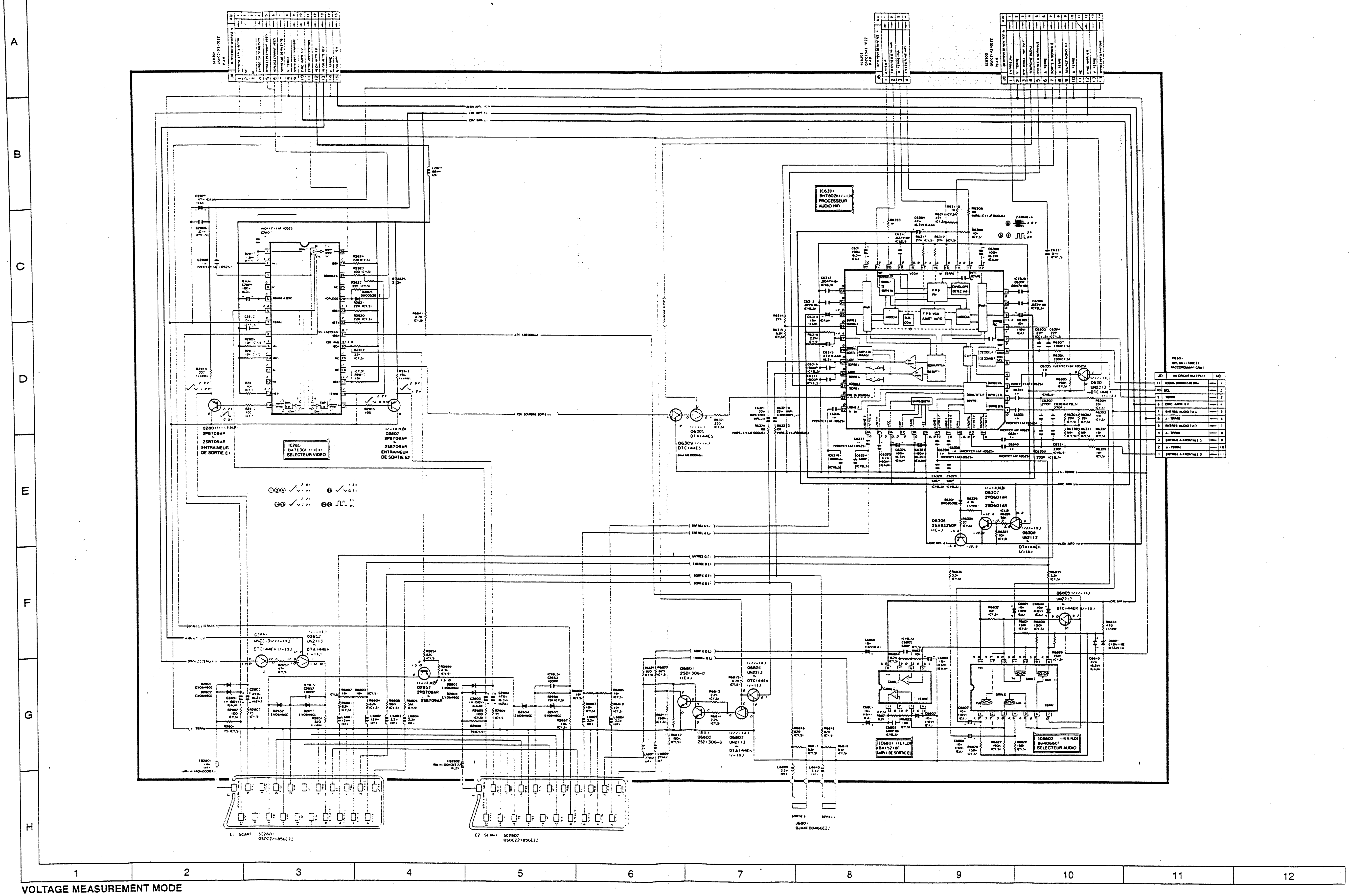
VOLTAGE MEASUREMENT MODE
PB . . . . . . Parentheses ( )
REC . . . . . Without Parentheses

TERMINAL CIRCUIT (VC-M29FPM/M49FPM)


A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12
IC2801
BA7630F
SELECTEUR VIDEO
Q2802
2PB709AR
2SB709AR
ENTRAINEUR
DE SORTIE E2
Q2801
2PB709AR
2SB709AR
ENTRAINEUR
DE SORTIE E1
R2815
100
R2817
10k
R2816
IC6803
BA7631F
SELECTEUR AUDIO
C6815
.33μ
C6816
.33μ
Q2651
UN2217
DTC144EK
Q2652
UN2113
DTA144EK
Q2653
2PB709AR
2SB709AR
Q6803
UN2113
DTA144EK
Q6804
UN2213
DTC144EK
SC2801
SCART
SC2802
SCART
2.8V
1.9V
3.2V
1.1V
3V
0V

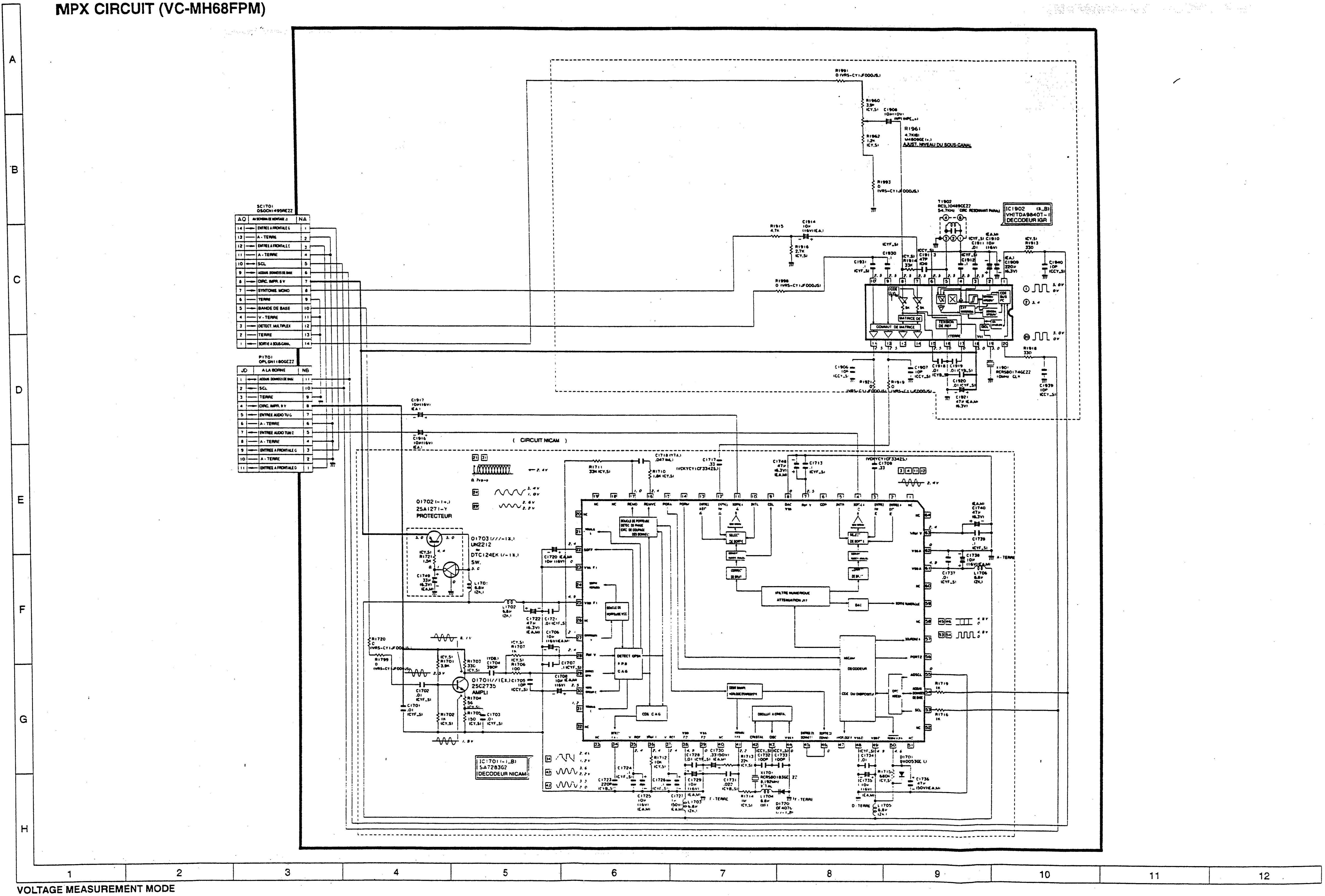
VOLTAGE MEASUREMENT MODE
PB . . . . . . Parentheses ( )
REC . . . . . Without Parentheses

TERMINAL CIRCUIT (VC-MH68FPM/MH69FPM)


A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12
IC2801 BA7630S (1E3) SELECTEUR VIDEO
Q2801 2PB709AR 2SB709AR ENTRAINEUR DE SORTIE E1
Q2802 2PB709AR 2SB709AR ENTRAINEUR DE SORTIE E2
IC6301 BH7802K1/-1,N PROCESSEUR AUDIO HIFI
IC6801 BA15218F AMPLI DE SORTIE E2
IC6802 BU4066CF SELECTEUR AUDIO
E1 SCART SC2801 QSOCZ2185GEZZ
E2 SCART SC2802 QSOCZ2185GEZZ
Q6301 DTA144ES
Q6306 2SA933SQR
Q6307 2PD601AR 2SD601AR
Q6308 UN2113
Q6801 2SD1306-D
Q6802 2SD1306-D
Q6803 UN2113
Q6804 UN2213
Q6805 UN2213
Q2652 UN2113
Q2653 2PB709AR 2SB709AR
TERRE
CANAL G
TV
AUX

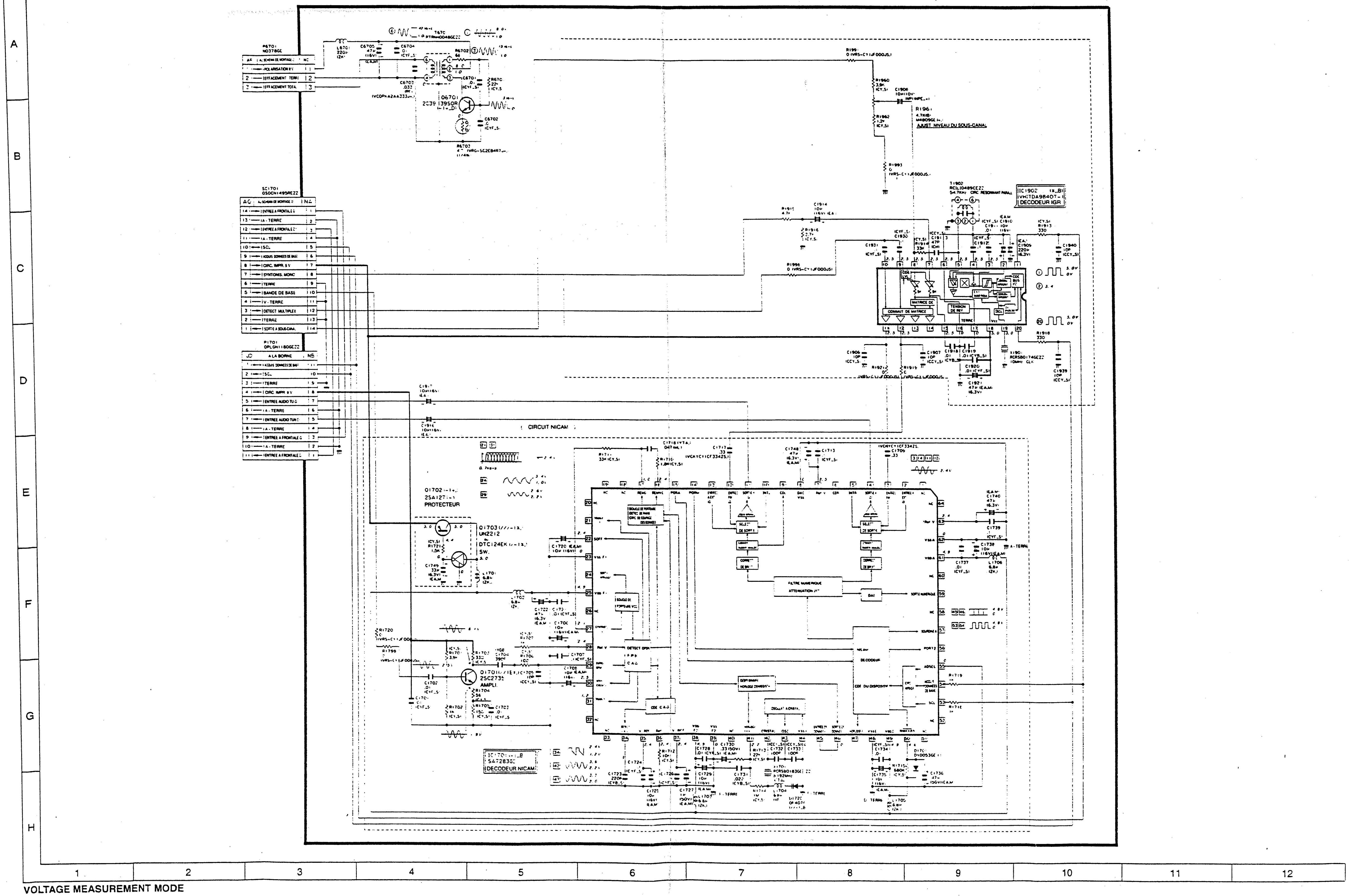
VOLTAGE MEASUREMENT MODE
PB . . . . . . Parentheses ( )
REC . . . . . Without Parentheses

MPX CIRCUIT (VC-MH68FPM)


A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12
SC1701
P1701
AJUST. NIVEAU DU SOUS-CANAL
IC1902
VHiTDA9840T-1
DECODEUR IGR
(CIRCUIT NICAM)
Q1702
2SA1271-Y
PROTECTEUR
Q1703
UN2212
DTC124EK
SW.
Q1701
2SC2735
AMPLI
IC1701
SAA7283G2
DECODEUR NICAM

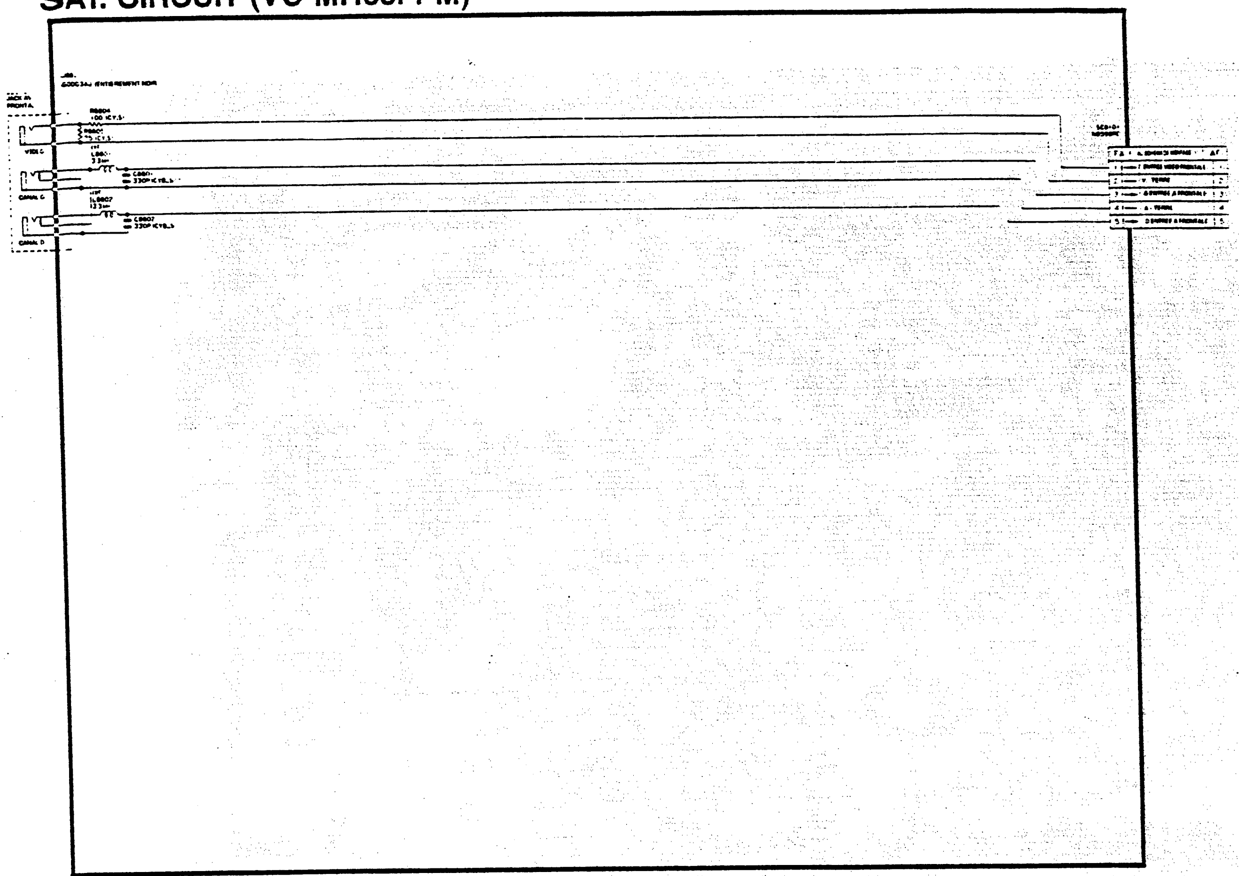
VOLTAGE MEASUREMENT MODE
PB . . . . . . Parentheses ( )
REC . . . . . Without Parentheses

MPX CIRCUIT (VC-MH69FPM)

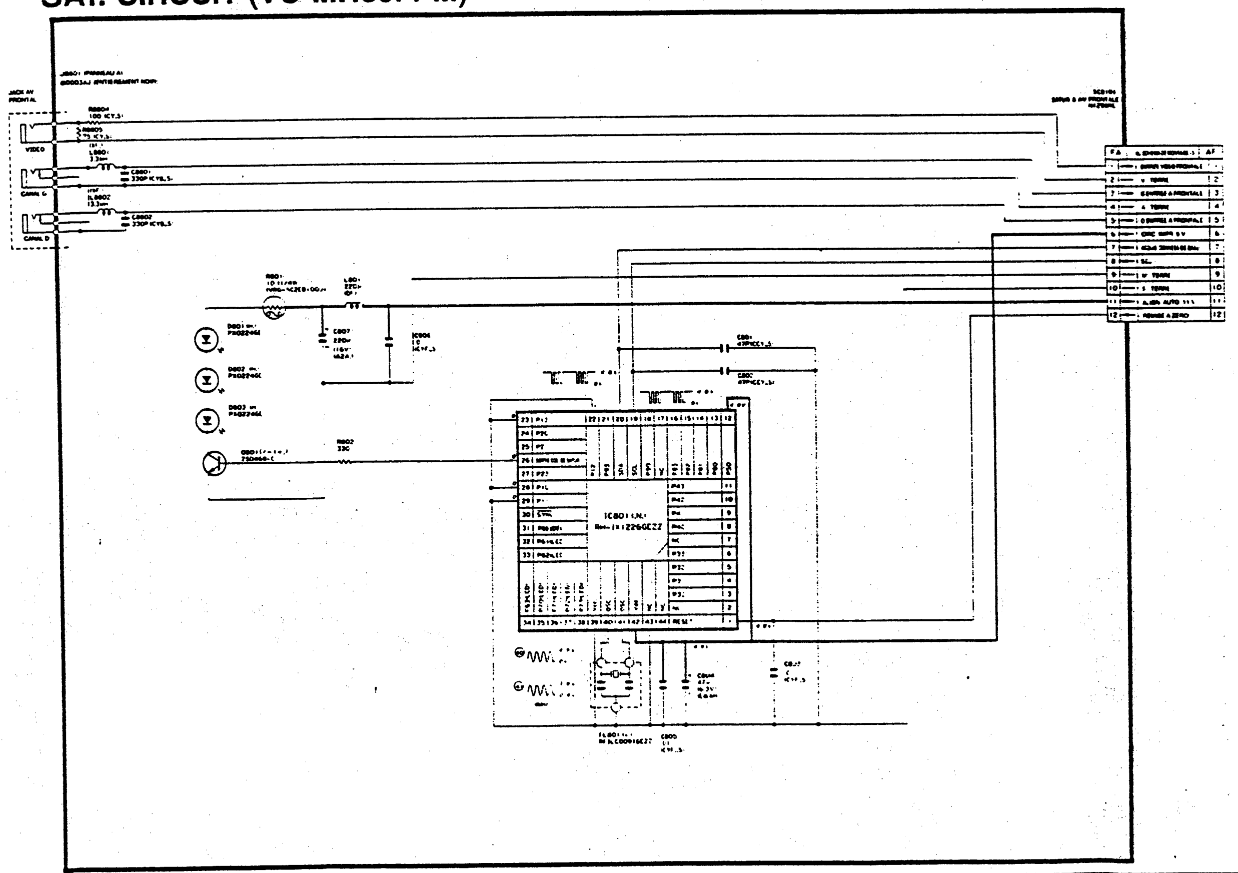

A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12
P6701
Q6701
2SC1395OR
SC1701
0SOCN1495REZZ
AC
A SCHEMA DE MONTAGE
NA
ENTREE A FRONTALE G
A - TERRE
ENTREE A FRONTALE D
SCL
ACCUS DONNEES DE BASE
CIRC. IMPR. 5 V
SYNTONIS. MONO
TERRE
BANDE DE BASE
V - TERRE
DETECT MULTIPLEX
SORTIE A SOUS-CANAL
P1701
0PLGN1180GEZZ
JD
A LA BORNE
NB
CIRC. IMPR. 9 V
ENTREE AUDIO TU G
ENTREE AUDIO TU D
AJUST NIVEAU DU SOUS-CANAL
T1902
RCILI0489CEZZ
54.7KHz CIRC RESONNANT PARALL
IC1902
VHiTDA9840T-1
DECODEUR IGR
CDE LVL
MATRICE DE
COMMUT DE MATRICE
TENSION DE REF
TERRE
Vcc
CDE BUS I²C
X1901
RCRSB0174GEZZ
10MHz CLK
CIRCUIT NICAM
Q1702
2SA1271
PROTECTEUR
Q1703
UN2212
DTC124EK
SW.
Q1701
2SC2735
AMPLI
IC1701
SAA7283GZ
DECODEUR NICAM
DETECT OPSK
C.A.G.
CDE C.A.G.
FILTRE NUMERIQUE
ATTENUATION
DECODEUR
CDE DU DISPOSITIF

VOLTAGE MEASUREMENT MODE
PB . . . . . . Parentheses ( )
REC . . . . . Without Parentheses

SAT. CIRCUIT (VC-MH68FPM)

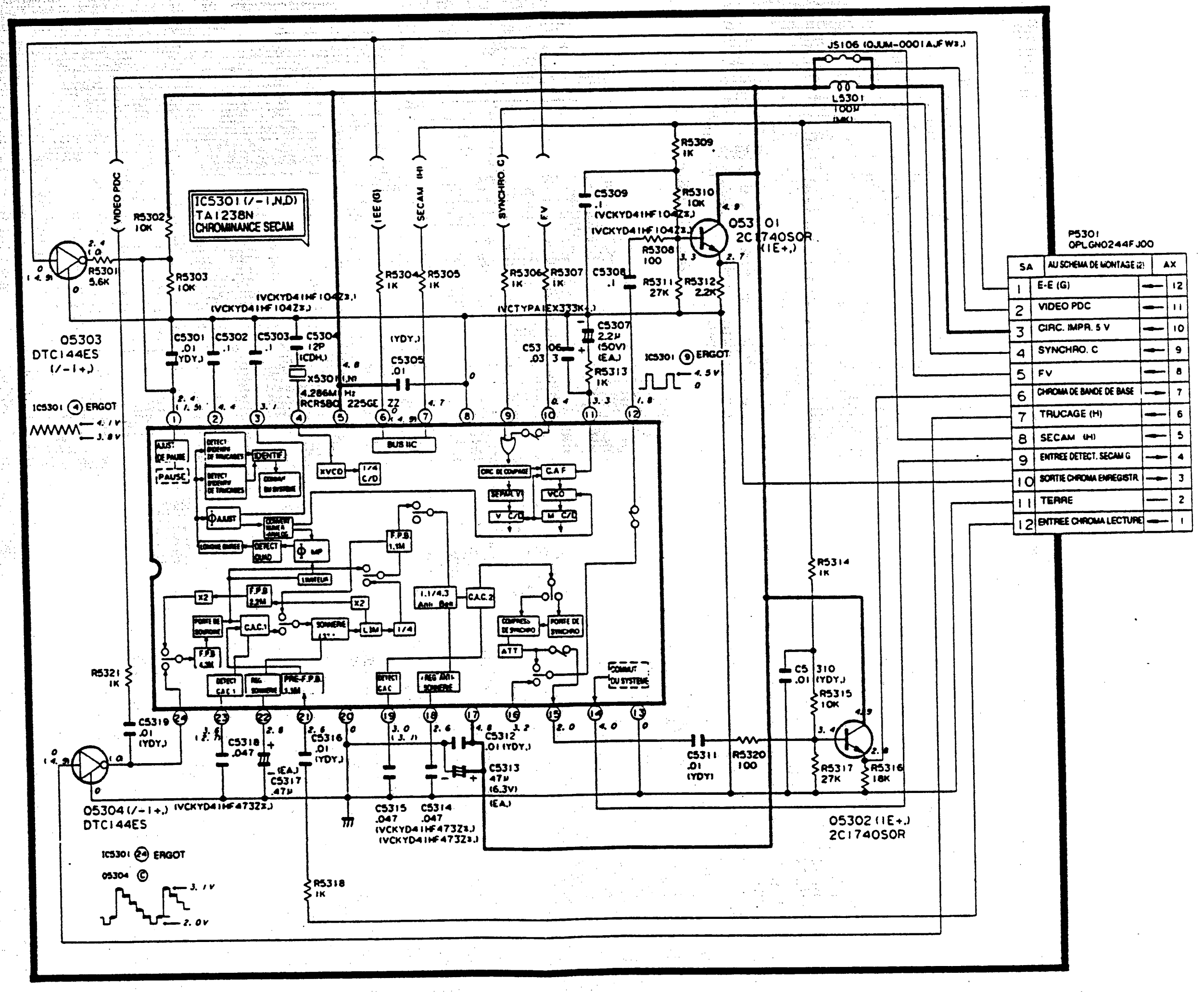


SAT. CIRCUIT (VC-MH69FPM)



VOLTAGE MEASUREMENT MODE
PB . . . . . . Parentheses ( )
REC . . . . . Without Parentheses

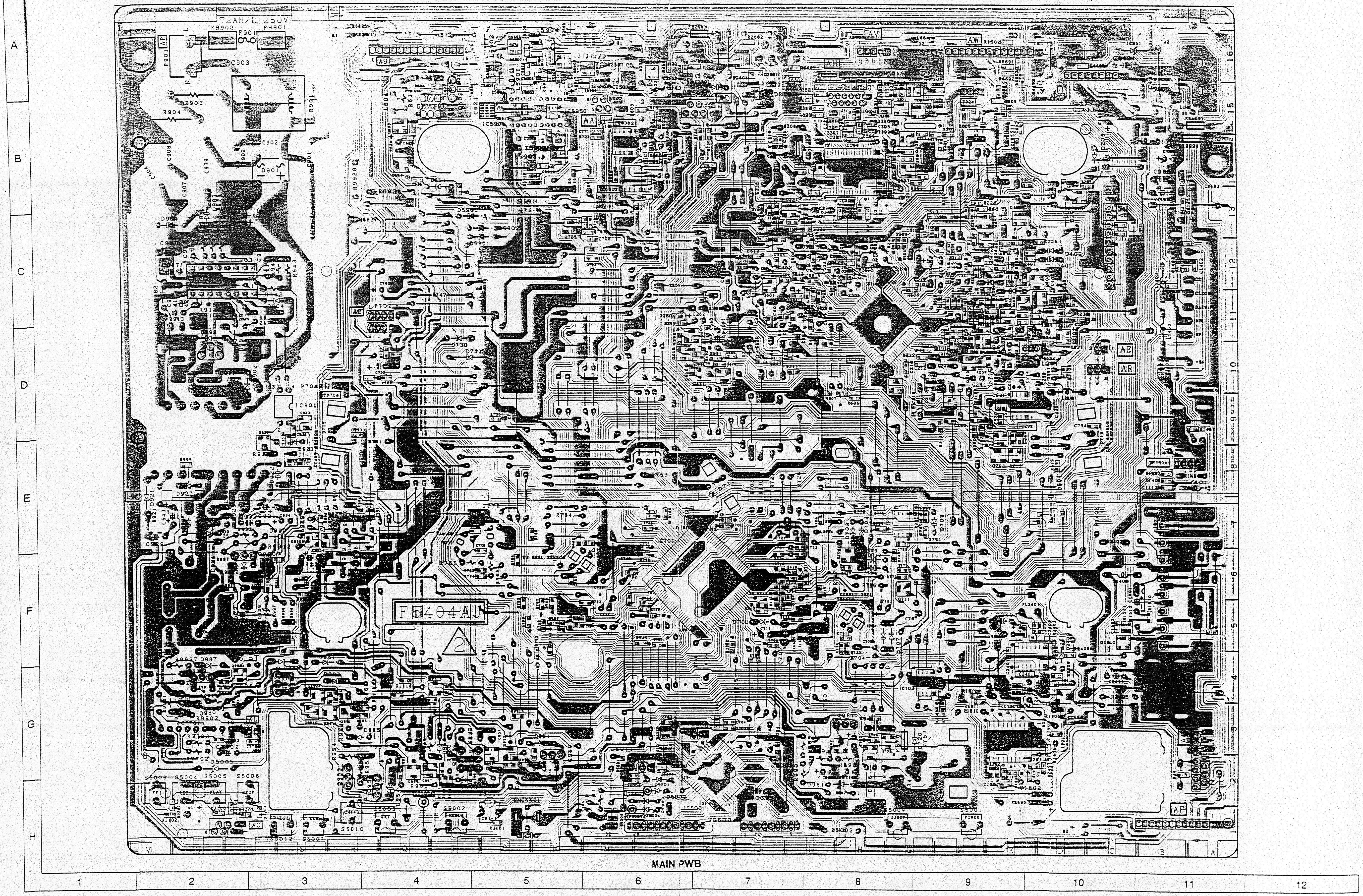
SAECAM CIRCUIT

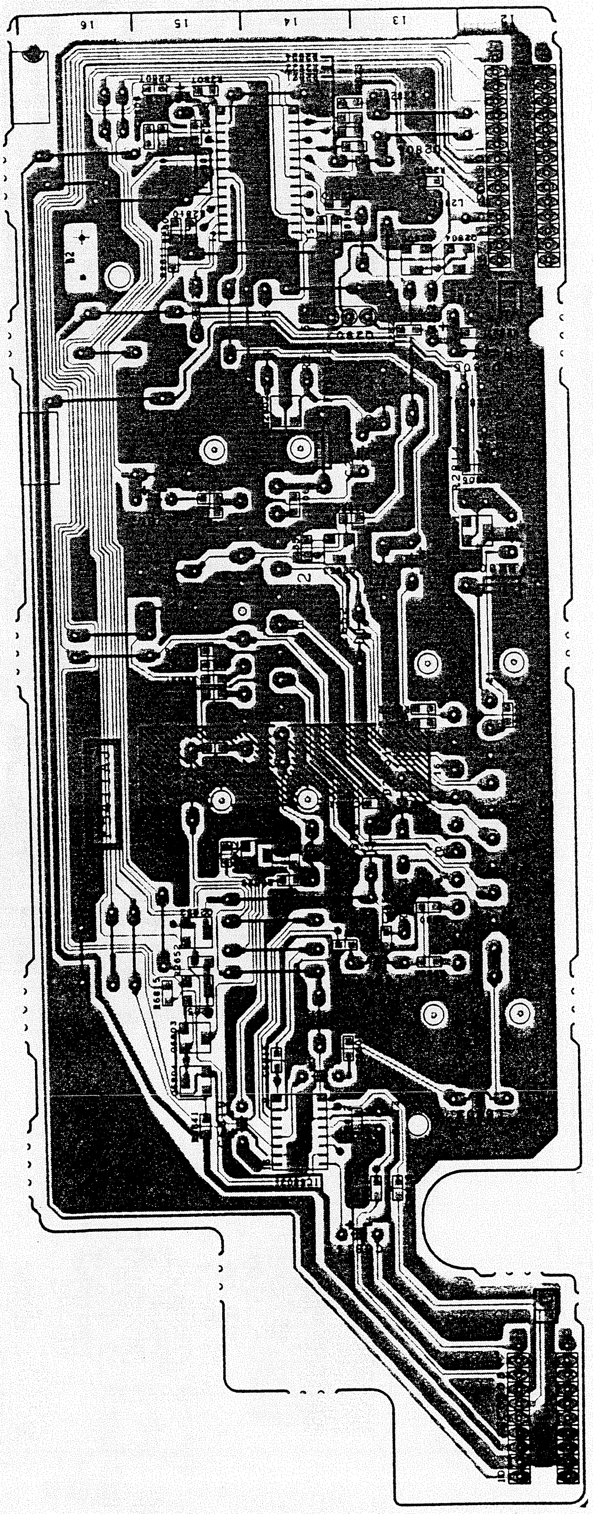

JS106 (OJUM-0001AJFW3.)
L5301
100µ
(MK)
VIDEO PDC
R5302
10K
IC5301 (/-1,N,D)
TA1238N
CHROMINANCE SECAM
(IEE (G))
(SECAM (H))
(SYNCHRO. C)
(FV)
R5309
1K
C5309
.1
(VCKYD41HF104Z3.)
R5310
10K
Q53 01
2C1740SOR
(1E+.)
R5308
100
R5301
5.6K
R5303
10K
(VCKYD41HF104Z3.)
R5304
1K
R5305
1K
R5306
1K
R5307
1K
C5308
.1
R5311
27K
R5312
2.2K
(VCTYPA1EX333K.)
Q5303
DTC144ES
(/-1+.)
C5301
.01
(YDY.)
C5302
.1
C5303
.1
C5304
12P
(CDH.)
X5301 (.N)
4.286MHz
RCRS8Q 225GE
(YDY.)
C5305
.01
C5306
.03
C5307
2.2µ
(50V)
(EA.)
R5313
1K
IC5301 ⑨ ERGOT
4.5V
IC5301 ④ ERGOT
4.1V
3.8V
AJUST DE PAUSE
PAUSE
DETECT
IDENTIF
XVCO
1/4 C/D
BUS IIC
CIRC DE COMPAGE
C.A.F
SEPARA VI
VCO
V C/D
M C/D
AJUST
F.P.B 1.1M
X2
F.P.B 2.2M
LIMITEUR
PORTE DE SONNERIE
C.A.C.1
SONNERIE
L3M
1/4
F.P.B 4.3M
DETECT C.A.C.1
REG SONNERIE
PRE-F.P.B. 3.3M
DETECT CAC
REG ANTI-SONNERIE
1.1/4.3 Anti Bell
C.A.C.2
COMPRESS DE SYNCHRO
PORTE DE SYNCHRO
ATT
COMMUT DU SYSTEME
R5314
1K
R5321
1K
C5319
.01
(YDY.)
C5318
.047
C5317
.47µ
(EA.)
C5316
.01
(YDY.)
C5312
.01 (YDY.)
C5313
47µ
(6.3V)
(EA.)
C5315
.047
C5314
.047
(VCKYD41HF473Z3.)
C5310
.01 (YDY.)
R5315
10K
C5311
.01
(YDY)
R5320
100
R5317
27K
R5316
18K
Q5304 (/-1+.)
DTC144ES
(VCKYD41HF473Z3.)
Q5302 (1E+.)
2C1740SOR
IC5301 ㉔ ERGOT
Q5304 ©
3.1V
2.0V
R5318
1K
P5301
OPLGN0244FJ00

SA	AU SCHEMA DE MONTAGE (2)		AX
1	E-E (G)	—	12
2	VIDEO PDC	—	11
3	CIRC. IMPR. 5 V	—	10
4	SYNCHRO. C	—	9
5	FV	—	8
6	CHROMA DE BANDE DE BASE	—	7
7	TRUCAGE (H)	—	6
8	SECAM (H)	—	5
9	ENTREE DETECT. SECAM G	—	4
10	SORTIE CHROMA ENREGISTR	—	3
11	TERRE	—	2
12	ENTREE CHROMA LECTURE	—	1

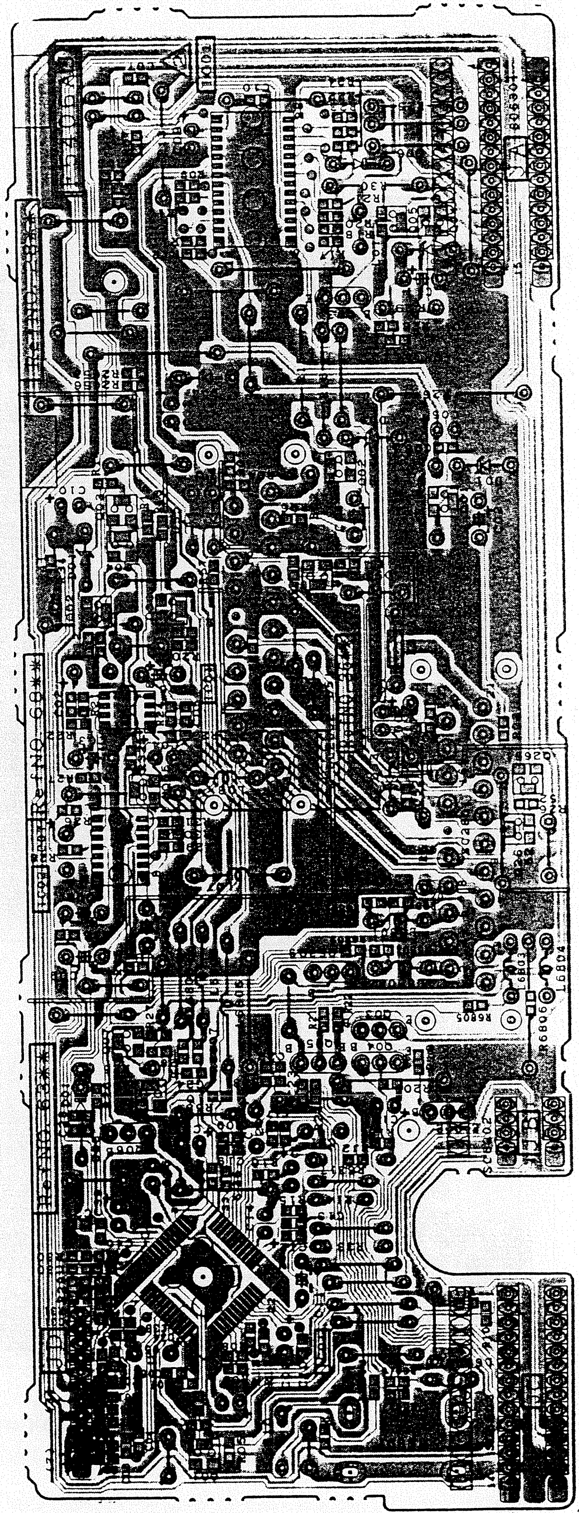
VC-M29FPM VC-MH66FPM
VC-M49FPM VC-MH68FPM
VC-MH69FPM

PWB FOIL PATTERN


A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12
T2AH/L 250V
FH902
F901
FH901
F5404AU
MAIN PWB

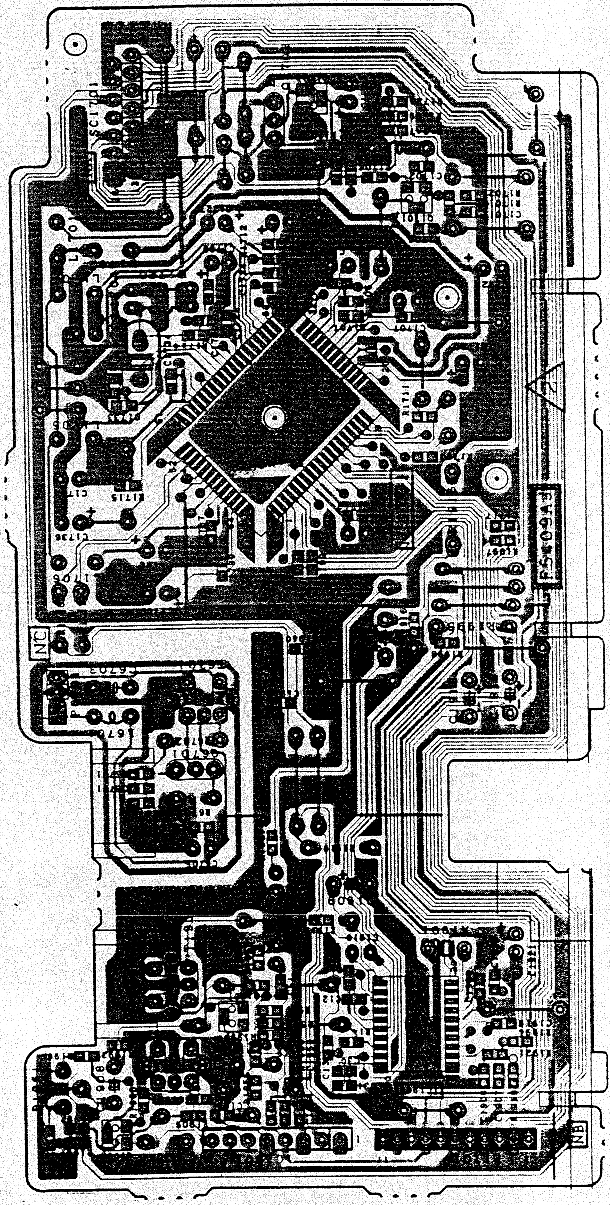

A
B
C
D
E
F
G
H
1
2
3
4
5
6

TERMINAL PWB (VC-M29FPM/M49FPM)

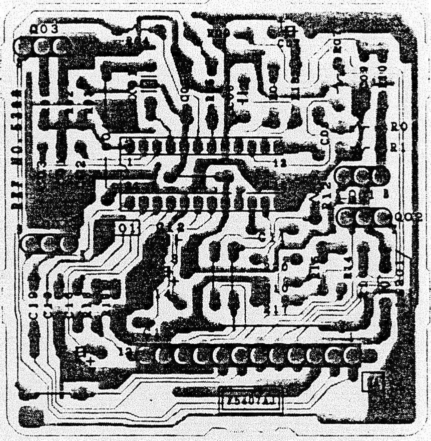


TERMINAL PWB (VC-MH66FPM/MH68FPM/MH69FPM)

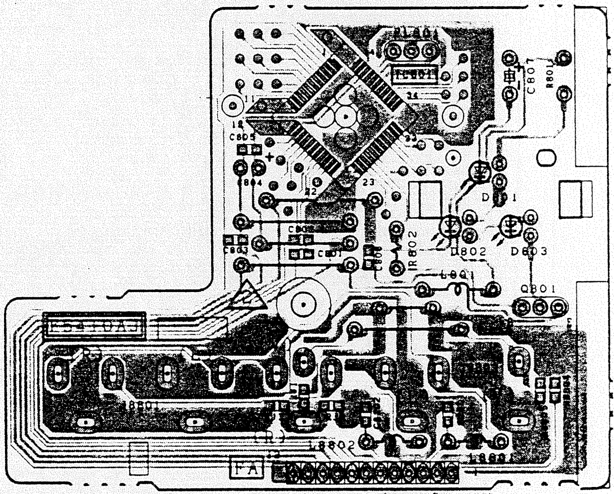
A
B
C
D
E
F
G
H


SC1101
F5609AJ
NC
NB

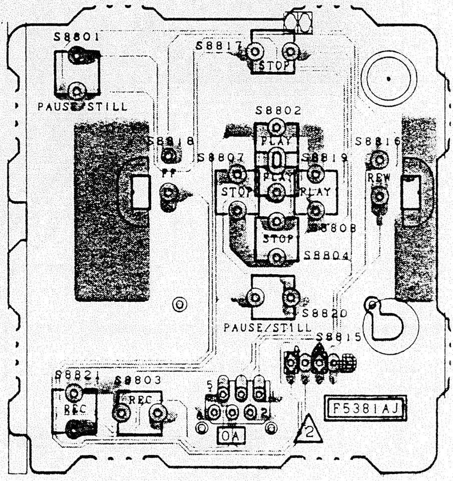
MPX PWB (VC-MH66FPM/MH68FPM/MH69FPM)


Q03
Q01
Q02
F5407AJ

SECAM PWB


C807
R801
D801
D802
D803
IR802
L801
Q801
F5410AJ
FA

SAT. PWB (VC-M68FPM/MH69FPM)


S8801
PAUSE/STILL
S8817
STOP
S8802
PLAY
S8818
FF
S8807
STOP
S8819
PLAY
S8816
REW
S8808
STOP
S8804
S8820
PAUSE/STILL
S8815
S8821
REC
S8803
REC
OA
F5381AJ

OPERATION PWB (except VC-MH66FPM)

1
2
3
4
5
6

10. REPLACEMENT PARTS LIST

PARTS REPLACEMENT

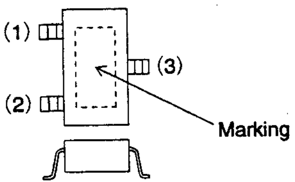
Many electrical and mechanical parts in video cassette recorder have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual; electrical components having such features are identified by ⚠ and shaded areas in the Replacement Parts Lists and Schematic Diagrams. The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

1. **MODEL NUMBER**
2. **REF. NO.**
3. **PART NO.**
4. **DESCRIPTION**
5. **PRICE CODE**

HOW TO IDENTIFY CHIP TRANSISTORS AND DIODES BY ITS MARKING



(1) Base/Input
(2) Emitter/Ground
(3) Collector/Output

Fig. 1

Package	Marking	Parts No.
Fig. 1	6A	VSUN2111///-1
Fig. 1	6C	VSUN2113///-1
Fig. 1	8A	VSUN2211///-1
Fig. 1	8B	VSUN2212///-1
Fig. 1	8C	VSUN2213///-1
Fig. 1	L5	VS2SB1197KQ-1

MARK ★ : SPARE PARTS-DELIVERY SECTION.

PRINTED WIRING BOARD ASSEMBLIES

(NOT REPLACEMENT ITEM)

Ref. No.	Part No.	★	Description	Code
	DUNTK5404TEVN	-	Main Unit (VC-M29FPM)	—
	DUNTK5404TEVM	-	Main Unit (VC-M49FPM)	—
	DUNTK5404TEVU	-	Main Unit (VC-MH66FPM)	—
	DUNTK5404TEVF	-	Main Unit (VC-MH68FPM)	—
	DUNTK5404TEVL	-	Main Unit (VC-MH69FPM)	—
	DUNTK5411TEV1	-	Terminal Unit (VC-M29FPM/M49FPM)	—
	DUNTK5406TEV6	-	Terminal Unit (VC-MH66FPM)	—
	DUNTK5406TEV5	-	Terminal Unit (VC-MH68FPM/MH69FPM)	—
	DUNTK5409TEV2	-	MPX Unit (VC-MH66FPM)	—
	DUNTK5409TEV5	-	MPX Unit (VC-MH68FPM)	—
	DUNTK5409TEV6	-	MPX Unit (VC-MH69FPM)	—
	DUNTK5410TEV1	-	F-AV Unit (VC-MH68FPM)	—
	DUNTK5410TEV0	-	F-AV/SAT. Unit (VC-MH69FPM)	—
	DUNTK5407TEV0	-	SECAM Unit	—
	DUNTK5381TEV2	-	Operation Unit (except VC-MH66FPM)	—

DUNTK5404TEVN (VC-M29FPM)
DUNTK5404TEVM (VC-M49FPM)
DUNTK5404TEVU (VC-MH66FPM)
DUNTK5404TEVF (VC-MH68FPM)
DUNTK5404TEVL (VC-MH69FPM)
MAIN UNIT

TUNER AND ASSEMBLY

Ref. No.	Part No.	★	Description	Code
CNV4451	RCNVR0183UMZZ	U	Converter	AW
TU1551	VTUVTST6HZ53/	J	Tuner	BC
UNT1501	RiFU-0675GEZZ	U	IF-Pack (VC-M29FPM/M49FPM)	BF
UNT1501	RiFU-0680GEZZ	J	IF-Pack (VC-MH66/68/69FPM)	BG

INTEGRATED CIRCUITS

Ref. No.	Part No.	★	Description	Code
IC201	VHiHA8503F/-1	J	HA118503F	AX
IC202	VHiMSM7479M-1	J	MSM7470-79MS	AL
IC301	VHiAN3363S/-1	J	AN3363SB (VC-M29FPM)	AH
IC301	VHiAN3364S/-1	J	AN3364SB (VC-M49FPM)	AL
IC301	VHiAN3366S/-1	J	AN3366SB (VC-MH66/68/69FPM)	AP
IC701	RH-iX1210GEZZ	J	MN675058SSM	BA
IC702	VHiS806HZ//-1	J	S-806H	AC
IC703	VHiST24C08M-1	J	ST24C08CM1	AK
IC705	VHiBA15218F1E	J	BA15218F	AF
⚠ IC903	VHiMC44603/-1	J	I.C.	AM
IC951	VHiUZT33///-1	J	I.C.	AC

INTEGRATED CIRCUITS (Continued)

Ref. No.	Part No.	★	Description	Code
IC1801	VHiSDA5649X1E	J	SDA5649X	AZ
IC2401	VHiLA7217M/-1	J	LA7217M	AG
IC5001	VHiUPD16312-1	J	UPD16312GB-3B4	AQ
IC5901	RH-iX1054GEZZ	J	M35014-052SP	AM
IC5950	VHiTC4S66F/-1	J	TC4S66F	AD
IC6301	VHiBA15218F1E	J	BA15218F	AF
IC6302	VHiBA7755AF1E	J	BA7755AF	AE
IC7701	VHiLB1645N/-1	J	LB1645N	AK

TRANSISTORS

Ref. No.	Part No.	★	Description	Code
Q201	VS2PD601AR/-1	U	2PD601AR	AA
Q202	VSUN2213///-1	J	UN2213	AA
Q204	VSUN2113///-1	J	UN2113 (VC-MH66/68/69FPM)	AA
Q205	VS2PD601AR/-1	U	2PD601AR	AA
Q210	VS2PD601AR/-1	U	2PD601AR	AA
Q211	VS2PD601AR/-1	U	2PD601AR	AA
Q212	VS2PD601AR/-1	U	2PD601AR	AA
Q213	VSUN2113///-1	J	UN2113	AA
Q214	VS2PD601AR/-1	U	2PD601AR	AA
Q215	VS2PD601AR/-1	U	2PD601AR	AA
Q301	VS2PD601AR/-1	U	2PD601AR (except VC-M29FPM)	AA
Q302	VSUN2213///-1	J	UN2213 (except VC-M29FPM)	AA
Q303	VSUN2213///-1	J	UN2213 (except VC-M29FPM)	AA
Q304	VSUN2213///-1	J	UN2213 (except VC-M29FPM)	AA
Q305	VS2PD601AR/-1	U	2PD601AR (except VC-M29FPM)	AA
Q306	VS2PD601AR/-1	U	2PD601AR (except VC-M29FPM)	AA
Q331	VS2PD601AR/-1	U	2PD601AR	AA
Q401	VS2PD601AR/-1	U	2PD601AR	AA
Q402	VS2PD601AR/-1	U	2PD601AR	AA
Q403	VS2PD601AR/-1	U	2PD601AR	AA
Q404	VS2PB709AR/-1	U	2PB709AR	AA
Q405	VS2PB709AR/-1	U	2PB709AR	AA
Q410	VS2PD601AR/-1	U	2PD601AR	AA
Q411	VSUN2113///-1	J	UN2113	AA
Q412	VSUN2212///-1	J	UN2212	AA
Q504	VSUN2213///-1	J	UN2213 (except VC-M29FPM)	AA
Q601	VS2PD601AR/-1	U	2PD601AR	AA
Q602	VS2C3939SQR-1	J	2SC3939SQR	AC
Q603	VSUN2111///-1	J	UN2111 (VC-MH69FPM)	AA
Q604	VSUN2211///-1	J	UN2211 (VC-MH69FPM)	AA
Q605	VS2PD601AR/-1	U	2PD601AR (VC-MH66/68/69FPM)	AA
Q701	VS2SB1197KQ-1	J	2SB1197KQ	AC
Q702	VSUN2213///-1	J	UN2213	AA

TRANSISTORS (Continued)

Ref. No.	Part No.	★	Description	Code
Q703	VSUN2211///-1	J	UN2211	AA
Q704	VS2PB709AR/-1	U	2PB709AR	AA
Q705	VSUN2211///-1	J	UN2211	AA
Q711	VS2PB709AR/-1	U	2PB709AR	AA
⚠ Q901	VS2SK2848//-1	J	2SK2848	AH
⚠ Q921	VS2PB709AR/-1	U	2PB709AR	AA
⚠ Q922	VS2PD601AR/-1	U	2PD601AR	AA
⚠ Q923	VS2PB709AR/-1	U	2PB709AR	AA
Q950	VS2SD471-KL1E	J	2SD471-KL1E	AC
Q951	VSUN2113///-1	J	UN2113	AA
Q952	VSUN2211///-1	J	UN2211	AA
Q953	VS2SD468-C/-1	J	2SD468-C (VC-M29FPM/M49FPM)	AD
Q953	VS2SD471-KL1E	J	2SD471-KL1E (VC-MH66/68/69FPM)	AC
Q954	VS2SD468-C/-1	J	2SD468-C (VC-M29FPM/M49FPM)	AD
Q954	VS2SD471-KL1E	J	2SD471-KL1E (VC-MH66/68/69FPM)	AC
Q956	VSUN2111///-1	J	UN2111	AA
Q957	VS2PD601AR/-1	U	2PD601AR	AA
Q958	VS2SD468-C/-1	J	2SD468-C	AD
Q959	VS2SD468-C/-1	J	2SD468-C	AD
Q961	VS2SC2001LK-1	J	2SC2001LK	AA
Q962	VS2PD601AR/-1	U	2PD601AR	AA
Q980	VS2SB1117KU1E	J	2SB1117KU1E (VC-MH68FPM/MH69FPM)	AE
Q982	VS2PD601AR/-1	U	2PD601AR (VC-MH68FPM/MH69FPM)	AA
Q1510	VSUN2213///-1	J	UN2213 (VC-MH66/68/69FPM)	AA
Q5901	VSUN2213///-1	J	UN2213	AA
Q5902	VS2PB709AR/-1	U	2PB709AR	AA
Q5903	VS2PD601AR/-1	U	2PD601AR	AA
Q5904	VS2PB709AR/-1	U	2PB709AR	AA
Q9905	VS2PB709AR/-1	U	2PB709AR	AA
Q9915	VSUN2213///-1	J	UN2213	AA

DIODES

Ref. No.	Part No.	★	Description	Code
D201	RH-DX0053GEZZ	J	1SS132 (except VC-M29FPM)	AA
D202	RH-DX0053GEZZ	J	1SS132	AA
D203	RH-DX0053GEZZ	J	1SS132 (VC-M29FPM/M49FPM)	AA
D401	RH-DX0053GEZZ	J	1SS132	AA
D402	RH-DX0053GEZZ	J	1SS132	AA
D502	RH-DX0053GEZZ	J	1SS132 (except VC-M29FPM)	AA
D601	RH-DX0053GEZZ	J	1SS132 (VC-MH69FPM)	AA
D701	RH-DX0053GEZZ	J	1SS132	AA
D702	RH-DX0053GEZZ	J	1SS132	AA

DIODES (Continued)

Ref. No.	Part No.	★	Description	Code
D703	RH-DX0053GEZZ	J	1SS132	AA
D704	RH-DX0053GEZZ	J	1SS132	AA
D706	RH-DX0053GEZZ	J	1SS132	AA
D707	RH-DX0053GEZZ	J	1SS132	AA
D708	RH-DX0053GEZZ	J	1SS132	AA
D709	RH-DX0053GEZZ	J	1SS132	AA
D711	RH-PX0238GEZZ	J	Cam Switch B	AF
D712	RH-PX0238GEZZ	J	Cam Switch A	AF
D713	RH-PX0267GEZZ	J	Cassette LED	AC
D714	RH-PX0233GEZZ	J	End Sensor	AD
D715	RH-PX0233GEZZ	J	Start Sensor	AD
D716	RH-PX0252GEZZ	J	Take-up Reel Sensor	AF
D717	RH-PX0252GEZZ	J	Supply Reel Sensor	AF
D719	RH-DX0053GEZZ	J	1SS132	AA
D720	RH-DX0053GEZZ	J	1SS132	AA
D723	RH-DX0053GEZZ	J	1SS132	AA
D730	RH-DX0053GEZZ	J	1SS132	AA
D731	RH-DX0053GEZZ	J	1SS132	AA
⚠ D901	RH-DX0083GEZZ	J	Diode Bridge	AC
⚠ D902	VHD05NU42//-1	J	05NU42	AF
⚠ D904	VHD1A3-F///-1	J	1A3-F	AA
⚠ D921	VHDFR103///-1	J	FR103	AC
⚠ D922	VHD1SS147//-1	J	1SS147	AA
⚠ D923	VHD30DF2-FC-1	J	30DF2	AE
			(VC-MH68FPM/MH69FPM)	
⚠ D924	VHD30DF2-FC-1	J	30DF2	AE
⚠ D926	VHDRK34////-1	J	RK34	AE
⚠ D927	VHD1SS147//-1	J	1SS147	AA
⚠ D928	RH-EX0619GEZZ	J	Zener Diode	AA
⚠ D929	RH-DX0053GEZZ	J	1SS132	AA
⚠ D930	RH-EX0616GEZZ	J	Zener Diode	AA
⚠ D931	RH-DX0053GEZZ	J	1SS132	AA
D951	RH-DX0053GEZZ	J	1SS132	AA
D953	RH-EX0617GEZZ	J	Zener Diode	AA
D954	RH-EX0633GEZZ	J	Zener Diode	AA
D956	RH-DX0053GEZZ	J	1SS132	AA
D960	VHD1A3-F///-1	J	1A3-F	AA
D961	VHD1A3-F///-1	J	1A3-F	AA
D980	VHDERB3201-1E	J	ERB3201	AD
			(VC-MH68FPM/MH69FPM)	
D981	RH-EX0616GEZZ	J	Zener Diode	AA
⚠ D982	VHD1A3-F///-1	J	1A3-F	AA
⚠ D983	VHD1A3-F///-1	J	1A3-F	AA
⚠ D984	VHD1A3-F///-1	J	1A3-F	AA
D988	RH-EX0613GEZZ	J	Zener Diode	AA
D993	RH-DX0053GEZZ	J	1SS132	AA
			(VC-MH68FPM/MH69FPM)	
D1451	RH-DX0053GEZZ	J	1SS132	AA
D2402	RH-DX0053GEZZ	J	1SS132	AA
D5001	RH-DX0053GEZZ	J	1SS132	AA
D5002	RH-DX0053GEZZ	J	1SS132	AA
D5003	RH-DX0053GEZZ	J	1SS132	AA
D5004	RH-DX0053GEZZ	J	1SS132	AA
D5005	RH-EX0723GEZZ	J	Zener Diode	AB

DIODES (Continued)

Ref. No.	Part No.	★	Description	Code
D5901	RH-DX0053GEZZ	J	1SS132	AA
D5902	RH-DX0053GEZZ	J	1SS132	AA
D5903	RH-DX0053GEZZ	J	1SS132	AA
⚠ IC901	RH-FX0008GEZZ	U	Photo Coupler	AE

PACKAGED CIRCUIT

X501	RCRSB0166GEZZ	J	Crystal, 4.43MHz	AG
X701	RCRSB0138GEN1	J	Crystal, 32kHz	AD
X702	RCRSB0190GEZZ	J	Crystal, 10MHz	AM
X5901	RCRSB0184GEZZ	J	Crystal, 17.73MHz	AM

COILS AND TRANSFORMERS

FL201	RCiLF0010AJZZ	V	Coil	
FL2401	RFiLA0020CEZZ	J	Filter	AD
L202	VP-XF181J0000	J	180μH	AB
L203	VP-XF151J0000	J	150μH	AB
L204	VP-XF151J0000	J	150μH	AB
L205	VP-XF150J0000	J	15μH	AB
L206	VP-MK150J0000	J	15μH	AB
L210	VP-DF101K0000	J	100μH	AB
L301	VP-MK101K0000	J	100μH	AB
L302	VP-MK101K0000	J	100μH	AB
			(VC-MH66/68/69FPM)	
L401	VP-XF101J0000	J	100μH	AB
L502	VP-XF120J0000	J	12μH	AB
L503	VP-XF100J0000	J	10μH	AB
L504	VP-XF221J0000	J	220μH	AB
L505	VP-MK102K0000	J	1mH	AB
			(except VC-M29FPM)	
L506	VP-XF560J0000	J	56μH	AB
L601	VP-YF153J0000	J	15mH	AC
L602	VP-YF822J0000	J	8.2mH	AC
L603	VP-YF153J0000	J	15mH	AC
L604	VP-ZK221K0000	J	220μH	AB
⚠ L901	RCiLF0275GEZZ	J	Coil	AF
⚠ L921	RCiLP0171CEZZ	J	Coil	AD
			(VC-MH68FPM/MH69FPM)	
⚠ L922	RCiLP0171CEZZ	J	Coil	AD
⚠ L923	RCiLP0175CEZZ	J	Coil	AD
L1401	VP-XF100J0000	J	10μH	AB
L1402	VP-DF100K0000	J	10μH	AB
L1403	VP-DF100K0000	J	10μH	AB
L1404	VP-XF100J0000	J	10μH	AB
L1405	VP-XF100J0000	J	10μH	AB
L1406	VP-XF100J0000	J	10μH	AB
L1801	VP-ZK8R2K0000	J	8.2μH	AB
L1802	VP-ZK8R2K0000	J	8.2μH	AB
L4491	VP-ZK4R7K0000	J	4.7μH	AB
L5901	VP-XF150J0000	J	15μH	AB
L5902	VP-ZK101K0000	J	100μH	AB
L5903	VP-XF120J0000	J	12μH	AB

COILS AND TRANSFORMERS (Continued)

Ref. No.	Part No.	★	Description	Code
T651	RTRNH0082GEZZ	J	OSC. Transformer (except VC-MH69FPM)	AF
T651	RTRNH0056GEZZ	J	OSC. Transformer (VC-MH69FPM)	AE
⚠ T901	RTRNZ0072UMZZ	U	Transformer	AN

CAPACITORS

Ref. No.	Part No.	★	Description	Code
C201	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C202	VCCCCY1HH270J	J	27p 50V Ceramic	AA
C203	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C204	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C205	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C206	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C207	VCCCCY1HH121J	J	120p 50V Ceramic	AA
C208	VCCCCY1HH100D	J	10p 50V Ceramic	AA
C209	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C210	VCCCCY1HH100D	J	10p 50V Ceramic	AA
C211	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C213	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C214	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C215	VCEAEM1HW335M	J	3.3 50V Electrolytic	AB
C216	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C217	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C218	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C219	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C220	VCEAEM1HW225M	J	2.2 50V Electrolytic	AB
C221	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C222	VCKYD41CY103N	J	0.01 16V Ceramic	AA
C223	VCEAEA0JW476M	J	47 6.3V Electrolytic	AB
C224	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C225	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C226	VCCCCY1HH151J	J	150p 50V Ceramic	AA
C227	VCCCCY1HH151J	J	150p 50V Ceramic	AA
C228	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C229	VCCCCY1HH270J	J	27p 50V Ceramic	AA
C230	VCEAEM0JW476M	J	47 6.3V Electrolytic	AB
C231	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C232	VCCCCY1HH390J	J	39p 50V Ceramic	AA
C233	VCCCCY1HH121J	J	120p 50V Ceramic	AA
C240	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C241	VCE9EM1AW226M	J	22 10V Elect.(N.P.)	AB
C243	VCCCCY1HH120J	J	12p 50V Ceramic	AA
C244	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C245	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C246	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C250	VCE9EA1AW106M	J	10 10V Elect.(N.P.)	AB
C251	VCEAEM1CW106M	J	10 16V Electrolytic (VC-MH66/68/69FPM)	AB
C252	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C301	VCEAEM0JW476M	J	47 6.3V Electrolytic	AB
C302	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C303	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA

CAPACITORS (Continued)

Ref. No.	Part No.	★	Description	Code
C304	VCKYD41CY103N	J	0.01 16V Ceramic	AA
C305	VCKYCY1HF223Z	J	0.022 50V Ceramic (except VC-M29FPM)	AB
C306	VCKYCY1HF223Z	J	0.022 50V Ceramic (except VC-M29FPM)	AB
C307	VCKYCY1HF223Z	J	0.022 50V Ceramic (except VC-M29FPM)	AB
C308	VCKYCY1HF223Z	J	0.022 50V Ceramic (except VC-M29FPM)	AB
C309	VCCCCY1HH390J	J	39p 50V Ceramic (except VC-M29FPM)	AA
C310	VCCCCY1HH390J	J	39p 50V Ceramic (except VC-M29FPM)	AA
C311	VCCCCY1HH390J	J	39p 50V Ceramic (VC-M29FPM)	AA
C311	VCCCCY1HH470J	J	47p 50V Ceramic (except VC-M29FPM)	AA
C312	VCCCCY1HH390J	J	39p 50V Ceramic (VC-M29FPM)	AA
C312	VCCCCY1HH470J	J	47p 50V Ceramic (except VC-M29FPM)	AA
C313	VCKYCY1HB102K	J	1000p 50V Ceramic (except VC-M29FPM)	AA
C314	VCKYCY1HB102K	J	1000p 50V Ceramic (except VC-M29FPM)	AA
C315	VCEAEM1HW225M	J	2.2 50V Electrolytic (VC-MH66/68/69FPM)	AB
C316	VCKYCY1HF223Z	J	0.022 50V Ceramic (VC-MH66/68/69FPM)	AB
C317	VCKYCY1HF223Z	J	0.022 50V Ceramic (VC-MH66/68/69FPM)	AB
C318	VCEAEM0JW476M	J	47 6.3V Electrolytic (VC-MH66/68/69FPM)	AB
C319	VCKYCY1HF103Z	J	0.01 50V Ceramic (VC-MH66/68/69FPM)	AA
C320	VCKYCY1HF223Z	J	0.022 50V Ceramic (VC-MH66/68/69FPM)	AB
C321	VCKYCY1HF223Z	J	0.022 50V Ceramic (VC-MH66/68/69FPM)	AB
C322	VCCCCY1HH101J	J	100p 50V Ceramic (VC-MH66/68/69FPM)	AA
C323	VCKYCY1HF103Z	J	0.01 50V Ceramic (VC-MH66/68/69FPM)	AA
C324	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C325	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C326	VCKYCY1HB102K	J	1000p 50V Ceramic (except VC-M29FPM)	AA
C327	VCKYCY1HF223Z	J	0.022 50V Ceramic (VC-M29FPM)	AB
C328	VCKYCY1HF223Z	J	0.022 50V Ceramic (VC-M29FPM)	AB
C329	VCKYD41HF104Z	J	0.1 50V Ceramic	AA
C330	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C331	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C338	VCEAEM0JW476M	J	47 6.3V Electrolytic	AB

CAPACITORS (Continued)

Ref. No.	Part No.	★	Description	Code
C351	VCCCCY1HH181J	J	180p 50V Ceramic	AA
C399	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
			(VC-MH66/68/69FPM)	
C401	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C402	VCEAEM1HW474M	J	0.47 50V Electrolytic	AB
C410	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C411	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C412	VCKYCY1EB103K	J	0.01 25V Ceramic	AA
C501	VCKYCY1CB333K	J	0.033 16V Ceramic	AA
C502	VCKYCY1CF683Z	J	0.068 16V Ceramic	AA
C503	VCKYCY1HF223Z	J	0.022 50V Ceramic	AB
C504	VCEAEM1HW474M	J	0.47 50V Electrolytic	AB
C505	VCCCCY1HH390J	J	39p 50V Ceramic	AA
C506	VCCCCY1HH151J	J	150p 50V Ceramic	AA
C507	VCEAEM1HW475M	J	4.7 50V Electrolytic	AB
C508	VCEAEM1HW225M	J	2.2 50V Electrolytic	AB
C509	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C510	VCCCCY1HH6R0D	J	6p 50V Ceramic	AA
C511	VCKYD41CY103N	J	0.01 16V Ceramic	AA
C512	VCEAEM1HW335M	J	3.3 50V Electrolytic	AB
C513	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C514	VCKYD41CY103N	J	0.01 16V Ceramic	AA
C515	VCEAEM0JW476M	J	47 6.3V Electrolytic	AB
C516	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C517	VCCCCY1HH181J	J	180p 50V Ceramic	AA
C518	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C519	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C520	VCKYCY1HB222K	J	2200p 50V Ceramic	AA
			(except VC-M29FPM)	
C521	VCEAEM1HW105M	J	1 50V Electrolytic	AB
C530	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C531	VCCCCY1HH331J	J	330p 50V Ceramic	AA
C540	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C541	VCCCCY1HH120J	J	12p 50V Ceramic	AA
C601	VCEAEM0JW226M	J	22 6.3V Electrolytic	AB
C602	VCKYCY1EB822K	J	8200p 25V Ceramic	AA
C603	VCKYCY1HB682K	J	6800p 50V Ceramic	AA
C604	VCEAEM0JW226M	J	22 6.3V Electrolytic	AB
C605	VCKYD41HF104Z	J	0.1 50V Ceramic	AA
C606	VCKYD41HF104Z	J	0.1 50V Ceramic	AA
C607	VCEAEM1HW105M	J	1 50V Electrolytic	AB
C608	VCKYCY1EB123K	J	0.012 25V Ceramic	AA
C609	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C610	VCEAEM1HW335M	J	3.3 50V Electrolytic	AB
C611	VCKYCY1HB152K	J	1500p 50V Ceramic	AA
C612	VCKYCY1EB223K	J	0.022 25V Ceramic	AA
C613	VCKYCY1CB333K	J	0.033 16V Ceramic	AA
			(except VC-M29FPM)	
C614	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C615	VCKYCY1HB681K	J	680p 50V Ceramic	AA
C616	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C617	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C618	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C619	VCCCCY1HH331J	J	330p 50V Ceramic	AA
C620	VCCCCY1HH181J	J	180p 50V Ceramic	AA

CAPACITORS (Continued)

Ref. No.	Part No.	★	Description	Code
C621	VCQPKA2AA562J	J	5600p 100V Mylar	AB
			(except VC-MH69FPM)	
C621	VCQPKA2AA682J	J	6800p 100V Mylar	AB
			(VC-MH69FPM)	
C622	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C623	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C624	VCEAEM1CW476M	J	47 16V Electrolytic	AB
C625	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C626	VCEAEM1HW474M	J	0.47 50V Electrolytic	AB
C627	VCKYD41CY103N	J	0.01 16V Ceramic	AA
			(VC-MH66/68/69FPM)	
C628	VCCCCY1HH331J	J	330p 50V Ceramic	AA
C701	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C702	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C703	VCCCCY1HH470J	J	47p 50V Ceramic	AA
C704	VCCCCY1HH470J	J	47p 50V Ceramic	AA
C705	VCCCCY1HH470J	J	47p 50V Ceramic	AA
C706	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C707	VCKYCY1EB103K	J	0.01 25V Ceramic	AA
C708	VCKYCY1CB473K	J	0.047 16V Ceramic	AA
C709	VCKYCY1EB103K	J	0.01 25V Ceramic	AA
C710	VCKYCY1HB472K	J	4700p 50V Ceramic	AA
C711	VCEAEM0JW336M	J	33 6.3V Electrolytic	AA
C712	VCEAEM0JW107M	J	100 6.3V Electrolytic	AB
C713	VCKYCY1EB103K	J	0.01 25V Ceramic	AA
C714	VCKYCY1HB472K	J	4700p 50V Ceramic	AA
C715	VCEAEM1HW105M	J	1 50V Electrolytic	AB
C716	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C720	VCCCCY1HH220J	J	22p 50V Ceramic	AA
C721	VCCCCY1HH220J	J	22p 50V Ceramic	AA
C722	VCCCCY1HH220J	J	22p 50V Ceramic	AA
C723	VCCCCY1HH220J	J	22p 50V Ceramic	AA
C724	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C726	VCKYCY1HB222K	J	2200p 50V Ceramic	AA
C727	VCCCCY1HH101J	J	100p 50V Ceramic	AA
C728	VCKYD41HB101K	J	100p 50V Ceramic	AA
C729	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C731	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C732	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C737	VCEAEM1CW226M	J	22 16V Electrolytic	AB
C738	VCEAEM0JW476M	J	47 6.3V Electrolytic	AB
C739	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C740	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C741	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C742	VCEAEM1HW105M	J	1 50V Electrolytic	AB
C745	VCEAEM0JW226M	J	22 6.3V Electrolytic	AB
C746	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C747	VCKYCY1CB473K	J	0.047 16V Ceramic	AA
C748	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C749	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C750	VCKYD41CY103N	J	0.01 16V Ceramic	AA
C751	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C752	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C753	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C754	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA

CAPACITORS (Continued)

Ref. No.	Part No.	★	Description	Code
C755	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C766	VCEAEM1EW226M	U	22 25V Electrolytic	AB
C767	RC-FZ5334BMNK	U	0.33 Mylar	AB
C768	VCKYCY1HB102K	J	1000p 50V Ceramic	AA
C769	VCKYCY1EB103K	J	0.01 25V Ceramic	AA
C770	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C771	VCCCCY1HH221J	J	220p 50V Ceramic	AA
C773	VCCCCY1HH101J	J	100p 50V Ceramic	AA
C774	RC-EZ0109GEZZ	J	0.1F Electorolytic	AH
C775	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C777	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C778	VCKYD41HB102K	J	1000p 50V Ceramic (except VC-M29FPM)	AA
C798	VCEAGA0JW108M	J	1000 6.3V Electrolytic	AC
C799	VCKYD41CY103N	J	0.01 16V Ceramic	AA
⚠ C903	RC-FZ029CUMZZ	U	0.1 Mylar	AD
⚠ C904	RC-KZ0096GEZZ	J	1000p 400V Ceramic	AD
⚠ C909	RC-EZ0440GEZZ	J	47 400V Electorolytic	AH
⚠ C911	RC-KZ0133GEZZ	U	330p 1kV Ceramic	AB
⚠ C917	VCQYTA1HM102J	J	1000p 50V Mylar	AA
⚠ C918	VCFYSA1HB105J	J	1 50V Mylar	AE
⚠ C919	VCQYTA1HM333J	J	0.033 50V Mylar	AA
C921	VCEAVA1JN476M	J	47 63V Electrolytic	AD
⚠ C922	VCEAGA1VW477M	J	470 35V Electrolytic (VC-MH66/68/69FPM)	AD
C923	VCEAVA1VN476M	J	47 35V Electrolytic (VC-MH66/68/69FPM)	AB
⚠ C924	RC-EZ0439GEZZ	J	2200 16V Electorolytic	AF
⚠ C925	VCEAVA1CN107M	J	100 16V Electrolytic	AB
⚠ C926	RC-EZ0438GEZZ	J	2200 10V Electorolytic	AF
C927	VCEAGA1AW477M	J	470 10V Electrolytic	AC
⚠ C928	VCEAVA1HN476M	J	47 50V Electrolytic	AB
⚠ C929	VCEAGA0JW227M	J	220 6.3V Electrolytic	AB
C930	VCQYTA1HM103J	J	0.01 50V Mylar	AA
⚠ C934	VCEAEM1HW105M	J	1 50V Electrolytic	AB
⚠ C935	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
⚠ C936	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C937	VCKYCY1HB102K	J	1000p 50V Ceramic	AA
⚠ C938	RC-KZ0121GEZZ	J	10n 1kV Ceramic	
⚠ C939	RC-FZ029CUMZZ	U	Mylar	AD
⚠ C940	VCEAGA1EW107M	J	100 25V Electrolytic	AD
⚠ C942	VCKYD41CX222N	J	2200p 16V Ceramic	AA
⚠ C943	VCEAGA0JW227M	J	220 6.3V Electrolytic	AB
C950	VCEAEM1HW105M	J	1 50V Electrolytic	AB
C951	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C956	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C957	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C958	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C959	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C962	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C963	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C964	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C965	VCKYPA1HF223Z	J	0.022 50V Ceramic	AA
C966	VCEAEM1HW106M	J	10 50V Electrolytic	AB
C1402	VCCCCY1HH100D	J	10p 50V Ceramic	AA

CAPACITORS (Continued)

Ref. No.	Part No.	★	Description	Code
C1403	VCCCCY1HH100D	J	10p 50V Ceramic	AA
C1404	VCCCCY1HH100D	J	10p 50V Ceramic	AA
C1405	VCEAEA1CW106M	J	10 16V Electrolytic	AB
C1406	VCQYTA1HM473J	J	0.047 50V Mylar	AA
C1407	VCEA2A1CW477M	J	470 16V Electrolytic	AB
C1408	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C1409	VCEAEM1AW107M	J	100 10V Electrolytic	AB
C1410	VCEAEM1CW476M	J	47 16V Electrolytic (except VC-MH69FPM)	AB
C1410	VCEAGA1CW227M	J	220 16V Electrolytic (VC-MH69FPM)	AA
C1411	VCKYD41CY103N	J	0.01 16V Ceramic	AA
C1412	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C1503	VCKYCY1CB393K	J	0.039 16V Ceramic (VC-MH66/68/69FPM)	AA
C1510	VCKYCY1HB102K	J	1000p 50V Ceramic (VC-MH66/68/69FPM)	AA
C1801	VCKYCY1CB333K	J	0.033 16V Ceramic	AA
C1802	VCQYTA1HM222J	J	2200p 50V Mylar	AA
C1803	VCKYCY1CB333K	J	0.033 16V Ceramic	AA
C1804	VCCSPA1HL151J	J	150p 50V Ceramic	AA
C1805	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C1806	VCEAEM0JW476M	J	47 6.3V Electrolytic	AB
C2401	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C2402	VCEAEM0JW476M	J	47 6.3V Electrolytic	AB
C2403	VCKYD41CY103N	J	0.01 16V Ceramic	AA
C2404	VCEAEM1HW105M	J	1 50V Electrolytic	AB
C2405	VCKYCY1HB821K	J	820p 50V Ceramic	AA
C2406	VCKYD41EF223Z	J	0.022 25V Ceramic	AA
C2407	VCKYCY1CB473K	J	0.047 16V Ceramic	AA
C2408	VCE9EA1AW106M	J	10 10V Elect.(N.P.)	AB
C2498	VCEAEM1HW105M	J	1 50V Electrolytic	AB
C2499	VCE9EA1AW226M	J	22 10V Elect.(N.P.)	AB
C4491	VCCSD41HL680J	J	68p 50V Ceramic	AA
C5001	VCKYD41CY103N	J	0.01 16V Ceramic	AA
C5002	VCEAEM0JW476M	J	47 6.3V Electrolytic	AB
C5003	VCKYPA1HF103Z	J	0.01 50V Ceramic	AA
C5004	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C5005	VCCCCY1HH470J	J	47p 50V Ceramic	AA
C5009	VCKYCY1HB271K	J	270p 50V Ceramic	AA
C5010	VCKYCY1HB271K	J	270p 50V Ceramic	AA
C5011	VCCSPA1HL271J	J	270p 50V Ceramic	AA
C5012	VCKYCY1HB271K	J	270p 50V Ceramic	AA
C5901	VCCCCY1HH330J	J	33p 50V Ceramic	AA
C5902	VCCCCY1HH330J	J	33p 50V Ceramic	AA
C5903	VCEAEA1HW105M	J	1 50V Electrolytic	AB
C5904	VCCCCY1HH470J	J	47p 50V Ceramic	AA
C5905	VCCCCY1HH470J	J	47p 50V Ceramic	AA
C5906	VCCCCY1HH470J	J	47p 50V Ceramic	AA
C5907	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C5908	VCCCCY1HH100D	J	10p 50V Ceramic	AA
C5909	VCCCCY1HH8R0D	J	8p 50V Ceramic	AA
C5910	VCEAEM0JW476M	J	47 6.3V Electrolytic	AB
C5911	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C5912	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA

CAPACITORS (Continued)

Ref. No.	Part No.	★	Description	Code
C5913	VCCCCY1HH101J	J	100p 50V Ceramic	AA
C5914	VCCCCY1HH101J	J	100p 50V Ceramic	AA
C5915	VCCCCY1HH100D	J	10p 50V Ceramic (VC-M29FPM/M49FPM)	AA
C5915	VCCCCY1HH8R0D	J	8p 50V Ceramic (VC-MH66/68/69FPM)	AA
C5916	VCCCCY1HH101J	J	100p 50V Ceramic	AA
C5917	VCEAEM1CW476M	J	47 16V Electrolytic	AB
C5918	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C7701	VCEAEM1CW476M	J	47 16V Electrolytic	AB
C7702	VCE9EA1HW105M	J	1 50V Elect.(N.P.)	AC
C7703	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C7704	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA

RESISTORS

Ref. No.	Part No.	★	Description	Code
R201	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide (except VC-M49FPM)	AA
R202	VRS-CY1JF103J	J	10k 1/16W Metal Oxide (VC-M49FPM)	AA
R202	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R203	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide	AA
R204	VRS-CY1JF822J	J	8.2k 1/16W Metal Oxide	AA
R205	VRS-CY1JF822J	J	8.2k 1/16W Metal Oxide	AA
R206	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide	AA
R207	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA
R210	VRS-CY1JF682J	J	6.8k 1/16W Metal Oxide	AA
R211	VRS-CY1JF182J	J	1.8k 1/16W Metal Oxide	AA
R212	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide	AA
R213	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
R214	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R216	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R217	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R218	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide	AA
R219	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R221	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide	AA
R222	VRS-CY1JF822J	J	8.2k 1/16W Metal Oxide	AA
R223	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide	AA
R224	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R225	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R226	VRS-CY1JF123J	J	12k 1/16W Metal Oxide	AA
R227	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R228	VRS-CY1JF152J	J	1.5k 1/16W Metal Oxide	AA
R230	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA
R231	VRS-CY1JF473J	J	47k 1/16W Metal Oxide	AA
R232	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide	AA
R233	VRS-CY1JF391J	J	390 1/16W Metal Oxide	AA
R234	VRS-CY1JF272J	J	2.7k 1/16W Metal Oxide	AA
R235	VRS-CY1JF681J	J	680 1/16W Metal Oxide	AA
R236	VRS-CY1JF821J	J	820 1/16W Metal Oxide	AA
R237	VRS-CY1JF681J	J	680 1/16W Metal Oxide	AA
R238	VRS-CY1JF153J	J	15k 1/16W Metal Oxide	AA

RESISTORS (Continued)

Ref. No.	Part No.	★	Description	Code
R239	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R240	VRS-CY1JF273J	J	27k 1/16W Metal Oxide	AA
R241	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide	AA
R250	VRS-CY1JF123J	J	12k 1/16W Metal Oxide	AA
R251	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA
R252	VRS-CY1JF822J	J	8.2k 1/16W Metal Oxide	AA
R253	VRS-CY1JF152J	J	1.5k 1/16W Metal Oxide	AA
R254	VRS-CY1JF561J	J	560 1/16W Metal Oxide	AA
R256	VRS-CY1JF471J	J	470 1/16W Metal Oxide	AA
R301	VRS-CY1JF682J	J	6.8k 1/16W Metal Oxide	AA
R302	VRS-CY1JF103J	J	10k 1/16W Metal Oxide (except VC-M29FPM)	AA
R304	VRS-CY1JF471J	J	470 1/16W Metal Oxide (VC-M29FPM)	AA
R304	VRS-CY1JF102J	J	1k 1/16W Metal Oxide (except VC-M29FPM)	AA
R305	VRS-CY1JF332J	J	3.3k 1/16W Metal Oxide (VC-M29FPM)	AA
R305	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide (except VC-M29FPM)	AA
R307	VRS-CY1JF473J	J	47k 1/16W Metal Oxide	AA
R308	VRD-RA2BE473J	J	47k 1/8W Carbon (except VC-M29FPM)	AA
R309	VRD-RA2BE470J	J	47 1/8W Carbon (except VC-M29FPM)	AA
R310	VRD-RA2BE470J	J	47 1/8W Carbon (except VC-M29FPM)	AA
R311	VRS-CY1JF473J	J	47k 1/16W Metal Oxide (except VC-M29FPM)	AA
R312	VRS-CY1JF473J	J	47k 1/16W Metal Oxide (except VC-M29FPM)	AA
R313	VRS-CY1JF473J	J	47k 1/16W Metal Oxide (except VC-M29FPM)	AA
R314	VRS-CY1JF473J	J	47k 1/16W Metal Oxide (except VC-M29FPM)	AA
R315	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide (except VC-M29FPM)	AA
R316	VRS-CY1JF103J	J	10k 1/16W Metal Oxide (except VC-M29FPM)	AA
R317	VRS-CY1JF181J	J	180 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R318	VRD-RA2BE103J	J	10k 1/8W Carbon (VC-MH66/68/69FPM)	AA
R319	VRS-CY1JF220J	J	22 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R330	VRD-RA2BE682J	J	6.8k 1/8W Carbon (VC-MH66/68/69FPM)	AA
R331	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R332	VRS-CY1JF333J	J	33k 1/16W Metal Oxide	AA
R333	VRS-CY1JF333J	J	33k 1/16W Metal Oxide	AA
R334	VRS-CY1JF152J	J	1.5k 1/16W Metal Oxide	AA
R351	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R401	VRS-CY1JF822J	J	8.2k 1/16W Metal Oxide	AA
R402	VRS-CY1JF331J	J	330 1/16W Metal Oxide	AA
R403	VRS-CY1JF182J	J	1.8k 1/16W Metal Oxide	AA

RESISTORS (Continued)

Ref. No.	Part No.	★	Description	Code
R404	VRS-CY1JF681J	J	680 1/16W Metal Oxide	AA
R405	VRD-RA2BE822J	J	8.2k 1/8W Carbon	AA
R406	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA
R407	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R408	VRS-CY1JF272J	J	2.7k 1/16W Metal Oxide	AA
R409	VRD-RA2BE471J	J	470 1/8W Carbon	AA
R410	VRS-CY1JF681J	J	680 1/16W Metal Oxide	AA
R411	VRS-CY1JF561J	J	560 1/16W Metal Oxide	AA
R412	VRS-CY1JF272J	J	2.7k 1/16W Metal Oxide	AA
R413	VRS-CY1JF272J	J	2.7k 1/16W Metal Oxide	AA
R420	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R421	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R422	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R501	VRD-RA2BE224J	J	220k 1/8W Carbon	AA
R502	VRS-CY1JF273J	J	27k 1/16W Metal Oxide	AA
R503	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide	AA
R504	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R505	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R506	VRS-CY1JF275J	J	2.7M 1/16W Metal Oxide	AA
R507	VRD-RA2BE563J	J	56k 1/8W Carbon	AA
R508	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
R509	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide	AA
R513	VRS-CY1JF391J	J	390 1/16W Metal Oxide	AA
R601	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
R602	VRS-CY1JF821J	J	820 1/16W Metal Oxide	AA
R603	VRS-CY1JF473J	J	47k 1/16W Metal Oxide	AA
R604	VRS-CY1JF122J	J	1.2k 1/16W Metal Oxide	AA
R608	VRS-CY1JF333J	J	33k 1/16W Metal Oxide	AA
			(VC-M29FPM/M49FPM)	
R608	VRS-CY1JF182J	J	1.8k 1/16W Metal Oxide	AA
			(VC-MH66/68/69FPM)	
R609	VRS-CY1JF822J	J	8.2k 1/16W Metal Oxide	AA
R610	VRS-CY1JF822J	J	8.2k 1/16W Metal Oxide	AA
R611	VRS-CY1JF274J	J	270k 1/16W Metal Oxide	AA
R612	VRS-CY1JF221J	J	220 1/16W Metal Oxide	AA
R613	VRS-CY1JF333J	J	33k 1/16W Metal Oxide	AA
R614	VRS-CY1JF271J	J	270 1/16W Metal Oxide	AA
R615	VRS-CY1JF471J	J	470 1/16W Metal Oxide	AA
			(except VC-M29FPM)	
R616	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R617	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R618	VRS-CY1JF154J	J	150k 1/16W Metal Oxide	AA
R619	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R620	VRS-CY1JF563J	J	56k 1/16W Metal Oxide	AA
R621	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R622	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R623	VRS-CY1JF823J	J	82k 1/16W Metal Oxide	AA
			(except VC-MH69FPM)	
R623	VRS-CY1JF153J	J	15k 1/16W Metal Oxide	AA
			(VC-MH69FPM)	
R624	VRS-CY1JF470J	J	47 1/16W Metal Oxide	AA
R625	VRS-CY1JF682J	J	6.8k 1/16W Metal Oxide	AA
R626	VRG-SC2EB4R7J	J	4.7 1/4W Fuse Resistor	AB
R627	VRS-CY1JF123J	J	12k 1/16W Metal Oxide	AA
R628	VRD-RA2BE473J	J	47k 1/8W Carbon	AA
			(VC-MH66/68/69FPM)	
R629	VRS-CY1JF473J	J	47k 1/16W Metal Oxide	AA
			(VC-MH66/68/69FPM)	
R630	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA
			(VC-MH66/68/69FPM)	
R631	VRD-RA2EE390J	J	39 1/4W Carbon	AA
			(VC-MH69FPM)	
R636	VRS-CY1JF224J	J	220k 1/16W Metal Oxide	AA
R639	VRS-CY1JF333J	J	33k 1/16W Metal Oxide	AA
			(VC-MH69FPM)	
R640	VRS-CY1JF333J	J	33k 1/16W Metal Oxide	AA
R701	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R702	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R703	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
			(except VC-M29FPM)	
R704	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
R705	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
R706	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
R709	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R710	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R711	VRS-CY1JF683J	J	68k 1/16W Metal Oxide	AA
R712	VRS-CY1JF224J	J	220k 1/16W Metal Oxide	AA
R713	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA
R714	VRS-CY1JF334J	J	330k 1/16W Metal Oxide	AA
R715	VRS-CY1JF392J	J	3.9k 1/16W Metal Oxide	AA
R716	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
R717	VRS-CY1JF684J	J	680k 1/16W Metal Oxide	AA
R718	VRS-CY1JF224J	J	220k 1/16W Metal Oxide	AA
R719	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA
R720	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R721	VRD-RA2BE392J	J	3.9k 1/8W Carbon	AA
			(except VC-M29FPM)	
R722	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
R723	VRS-CY1JF182J	J	1.8k 1/16W Metal Oxide	AA
R724	VRS-CY1JF224J	J	220k 1/16W Metal Oxide	AA
R725	VRD-RA2BE223J	J	22k 1/8W Carbon	AA
R726	VRD-RA2BE393J	J	39k 1/8W Carbon	AA
R727	VRS-CY1JF153J	J	15k 1/16W Metal Oxide	AA
R728	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R729	VRS-CY1JF183J	J	18k 1/16W Metal Oxide	AA
R730	VRD-RA2BE101J	J	100 1/8W Carbon	AA
R731	VRS-CY1JF154J	J	150k 1/16W Metal Oxide	AA
R732	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R733	VRS-CY1JF154J	J	150k 1/16W Metal Oxide	AA
R734	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R735	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R736	VRS-CY1JF334J	J	330k 1/16W Metal Oxide	AA
R737	VRS-CY1JF334J	J	330k 1/16W Metal Oxide	AA
R740	VRS-CY1JF331J	J	330 1/16W Metal Oxide	AA
R742	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide	AA
R743	VRS-CY1JF682J	J	6.8k 1/16W Metal Oxide	AA
R744	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
R745	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R746	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA
R747	VRD-RA2BE102J	J	1k 1/8W Carbon	AA

RESISTORS (Continued)

Ref. No.	Part No.	★	Description	Code
R748	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
R749	VRS-CY1JF331J	J	330 1/16W Metal Oxide	AA
R751	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R752	VRS-CY1JF102J	J	1k 1/16W Metal Oxide (except VC-M29FPM)	AA
R753	VRS-CY1JF102J	J	1k 1/16W Metal Oxide (except VC-M29FPM)	AA
R754	VRS-CY1JF102J	J	1k 1/16W Metal Oxide (except VC-M29FPM)	AA
R755	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R756	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R757	VRD-RM2HD680J	J	68 1/2W Carbon	AA
R758	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
R759	VRD-RA2EE151J	J	150 1/4W Carbon	AA
R760	VRD-RA2BE123J	J	12k 1/8W Carbon	AA
R761	VRD-RA2BE123J	J	12k 1/8W Carbon	AA
R762	VRS-CY1JF154J	J	150k 1/16W Metal Oxide	AA
R763	VRD-RA2BE331J	J	330 1/8W Carbon	AA
R764	VRS-CY1JF154J	J	150k 1/16W Metal Oxide	AA
R765	VRD-RA2BE331J	J	330 1/8W Carbon	AA
R766	VRS-CY1JF392J	J	3.9k 1/16W Metal Oxide	AA
R767	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R769	VRS-CY1JF125J	J	1.2M 1/16W Metal Oxide	AA
R770	VRD-RA2BE473J	J	47k 1/8W Carbon	AA
R771	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R772	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R773	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R774	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
R775	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R776	VRS-CY1JF334J	J	330k 1/16W Metal Oxide	AA
R777	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA
R778	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA
R779	VRS-CY1JF331J	J	330 1/16W Metal Oxide (except VC-MH68FPM)	AA
R780	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R783	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R785	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R786	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R787	VRD-RA2BE471J	J	470 1/8W Carbon	AA
R790	VRD-RA2BE331J	J	330 1/8W Carbon	AA
R791	VRS-CY1JF155J	J	1.5M 1/16W Metal Oxide	AA
R792	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R798	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA
⚠ R901	VRD-RM2HD105J	J	1M 1/2W Carbon	AA
⚠ R902	RR-WZ0006GEZZ	U	4.7 2W	AC
⚠ R903	VRC-UA2HG685K	J	6.8M 1/2W Solid	AA
⚠ R904	VRC-UA2HG685K	J	6.8M 1/2W Solid	AA
⚠ R908	RR-SZ0007GEZZ	J	68k 2W	AB
⚠ R910	VRD-RA2EE102J	J	1k 1/4W Carbon	AA
⚠ R913	VRN-VV3LBR68J	J	0.68 Metal Film	AB
⚠ R914	VRD-RA2EE102J	J	1k 1/4W Carbon	AA
⚠ R917	VRD-RA2EE101J	J	100 1/4W Carbon	AA
⚠ R919	VRD-RA2BE272J	J	2.7k 1/8W Carbon	AA
⚠ R921	VRG-SC2EB1R0J	J	1 1/4W Fuse Resistor	AB
⚠ R923	VRD-RA2BE153J	J	15k 1/8W Carbon	AA

RESISTORS (Continued)

Ref. No.	Part No.	★	Description	Code
⚠ R924	VRD-RA2BE224J	J	220k 1/8W Carbon	AA
⚠ R931	VRD-RA2BE221J	J	220 1/8W Carbon	AA
⚠ R932	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
⚠ R933	VRD-RA2BE221J	J	220 1/8W Carbon	AA
⚠ R934	VRS-CY1JF332J	J	3.3k 1/16W Metal Oxide	AA
⚠ R936	VRD-RA2BE272J	J	2.7k 1/8W Carbon	AA
⚠ R938	VRS-CY1JF392J	J	3.9k 1/16W Metal Oxide	AA
⚠ R939	VRS-CY1JF682J	J	6.8k 1/16W Metal Oxide	AA
R940	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
R941	VRS-CY1JF392J	J	3.9k 1/16W Metal Oxide	AA
⚠ R942	VRD-RA2BE122J	J	1.2k 1/8W Carbon	AA
⚠ R943	VRD-RA2BE223J	J	22k 1/8W Carbon	AA
⚠ R944	VRD-RA2BE223J	J	22k 1/8W Carbon	AA
⚠ R945	VRD-RA2BE273J	J	27k 1/8W Carbon	AA
⚠ R946	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
R950	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide	AA
R952	VRS-CY1JF181J	J	180 1/16W Metal Oxide	AA
R953	VRS-CY1JF333J	J	33k 1/16W Metal Oxide	AA
R954	VRD-RA2BER56J	J	0.56 1/8W Carbon	AA
R955	VRD-RA2BER56J	J	0.56 1/8W Carbon	AA
R956	VRD-RA2BER56J	J	0.56 1/8W Carbon	AA
R957	VRD-RA2BER56J	J	0.56 1/8W Carbon	AA
R958	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide	AA
R959	VRS-CY1JF330J	J	33 1/16W Metal Oxide	AA
R960	VRD-RA2EE121J	J	120 1/4W Carbon	AA
R961	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide	AA
R962	VRS-CY1JF330J	J	33 1/16W Metal Oxide	AA
R963	VRD-RA2EE121J	J	120 1/4W Carbon	AA
R965	VRD-RA2BE223J	J	22k 1/8W Carbon	AA
R981	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R982	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R983	VRS-CY1JF273J	J	27k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R984	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA
R985	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide (VC-MH68FPM/MH69FPM)	AA
R986	VRD-RA2BE562J	J	5.6k 1/8W Carbon (VC-MH68FPM/MH69FPM)	AA
R987	VRD-RA2BE472J	J	4.7k 1/8W Carbon (VC-MH68FPM/MH69FPM)	AA
R988	VRD-RM2HD821J	J	820 1/2W Carbon (VC-MH68FPM/MH69FPM)	AA
R989	VRD-RA2BE271J	J	270 1/8W Carbon	AA
R990	VRD-RA2BE181J	J	180 1/8W Carbon	AA
R991	VRD-RA2BE273J	J	27k 1/8W Carbon	AA
R992	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide (VC-MH68FPM/MH69FPM)	AA
R993	VRD-RA2BE822J	J	8.2k 1/8W Carbon	AA
R994	VRD-RA2BE270J	J	27 1/8W Carbon	AA
⚠ R995	VRS-CY1JF100J	J	10 1/16W Metal Oxide	AA
⚠ R996	VRD-RA2BE272J	J	2.7k 1/8W Carbon	AA
⚠ R997	VRD-RA2BE822J	J	8.2k 1/8W Carbon	AA
R1402	VRD-RA2BE101J	J	100 1/8W Carbon	AA
R1403	VRS-CY1JF224J	J	220k 1/16W Metal Oxide	AA
R1456	VRD-RA2BE472J	J	4.7k 1/8W Carbon	AA

RESISTORS (Continued)

Ref. No.	Part No.	★	Description	Code
R1457	VRS-CY1JF123J	J	12k 1/16W Metal Oxide	AA
R1458	VRS-CY1JF333J	J	33k 1/16W Metal Oxide	AA
R1501	VRD-RA2BE822J	J	8.2k 1/8W Carbon (VC-MH66/68/69FPM)	AA
R1502	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R1510	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R1511	VRS-CY1JF822J	J	8.2k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R1801	VRS-CY1JF125J	J	1.2M 1/16W Metal Oxide	AA
R1802	VRS-CY1JF682J	J	6.8k 1/16W Metal Oxide	AA
R1803	VRS-CY1JF125J	J	1.2M 1/16W Metal Oxide	AA
R1804	VRS-CY1JF105J	J	1M 1/16W Metal Oxide	AA
R1805	VRS-CY1JF682J	J	6.8k 1/16W Metal Oxide	AA
R1806	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide	AA
R1807	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA
R1810	VRD-RA2BE221J	J	220 1/8W Carbon	AA
R1811	VRS-CY1JF221J	J	220 1/16W Metal Oxide	AA
R1812	VRS-CY1JF221J	J	220 1/16W Metal Oxide	AA
R2401	VRS-CY1JF392J	J	3.9k 1/16W Metal Oxide	AA
R2402	VRS-CY1JF561J	J	560 1/16W Metal Oxide	AA
R2403	VRS-CY1JF154J	J	150k 1/16W Metal Oxide	AA
R2408	VRS-CY1JF822J	J	8.2k 1/16W Metal Oxide	AA
R2409	VRS-CY1JF684J	J	680k 1/16W Metal Oxide	AA
R2495	VRD-RA2BE101J	J	100 1/8W Carbon	AA
R2496	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
R2497	VRS-CY1JF682J	J	6.8k 1/16W Metal Oxide	AA
R2498	VRS-CY1JF123J	J	12k 1/16W Metal Oxide	AA
R2499	VRS-CY1JF152J	J	1.5k 1/16W Metal Oxide	AA
R5001	VRS-CY1JF471J	J	470 1/16W Metal Oxide	AA
R5002	VRD-RM2HD100J	J	10 1/2W Carbon	AA
R5003	VRD-RA2BE393J	J	39k 1/8W Carbon	AA
R5004	VRS-CY1JF123J	J	12k 1/16W Metal Oxide	AA
R5005	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA
R5006	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA
R5007	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA
R5008	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA
R5009	VRS-CY1JF273J	J	27k 1/16W Metal Oxide	AA
R5010	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R5901	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R5902	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R5903	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R5904	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA
R5905	VRS-CY1JF272J	J	2.7k 1/16W Metal Oxide	AA
R5906	VRS-CY1JF561J	J	560 1/16W Metal Oxide	AA
R5907	VRS-CY1JF561J	J	560 1/16W Metal Oxide	AA
R5908	VRS-CY1JF561J	J	560 1/16W Metal Oxide	AA
R5909	VRS-CY1JF271J	J	270 1/16W Metal Oxide	AA
R5910	VRD-RA2BE391J	J	390 1/8W Carbon	AA
R5911	VRD-RA2BE391J	J	390 1/8W Carbon	AA
⚠ R7701	VRG-SC2EB2R2J	J	2.2 1/4W Fuse Resistor	AC
R7702	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
R7703	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
R9909	VRD-RA2BE333J	J	33k 1/8W Carbon	AA

MISCELLANEOUS PARTS (Continued)

Ref. No.	Part No.	★	Description	Code
R9920	VRD-RA2BE471J	J	470 1/8W Carbon	AA
R9928	VRD-RM2HD681J	J	680 1/2W Carbon (VC-MH66/68/69FPM)	AA

MISCELLANEOUS PARTS

Ref. No.	Part No.	★	Description	Code
⚠	QACCV2009AJZZ	V	AC Cord	AM
DG5001	VVK20U26106-1	J	Fluorescent Display Tube	AX
⚠ F901	QFS-C2025CEZZ	J	Fuse, T2AH/250V	AD
FB701	RBLN-0043CEZZ	J	Balun	AB
FB4491	RBLN-0043CEZZ	J	Balun	AB
FB9991	RBLN-0043CEZZ	J	Balun	AB
⚠ FH901	QFSHD1013CEZZ	J	Fuse Holder	AC
⚠ FH902	QFSHD1014CEZZ	J	Fuse Holder	AC
P1	QPLGN0559REZZ	J	Plug, 5pin (VC-MH68FPM)	AB
P1	QPLGN1259REZZ	J	Plug, 12pin (VC-MH69FPM)	AE
P2	QPLGZ1531GEZZ	J	Plug, 15pin	AD
P3	QPLGZ0431GEZZ	J	Plug, 4pin (VC-MH66/68/69FPM)	AC
P4	QPLGZ1031GEZZ	J	Plug, 10pin (VC-M29FPM/M49FPM)	AB
P4	QPLGZ1431GEZZ	J	Plug, 14pin (VC-MH66/68/69FPM)	AC
P702	QPLGZ0974GEZZ	J	Plug, 9pin	AD
P703	QPLGN0247REZZ	J	Plug, 2pin	AA
P704	QPLGN0247REZZ	J	Plug, 2pin	AA
⚠ P901	QPLGN0269GEZZ	J	Plug, 2pin	AB
P1501	QPLGN0447REZZ	J	Plug, 4pin	AA
P2201	QPLGZ0331GEZZ	J	Plug, 3pin	AB
P5005	QPLGN0247REZZ	J	Plug, 2pin	AA
P5007	QPLGN0247REZZ	J	Plug, 2pin	AA
RMC5501	RRMCU0058GEZZ	J	Remote Receiver	AE
S701	QSW-F0042AJZZ	V	Switch	AG
S5001	QSW-K0086GEZZ	J	Switch	AC
S5002	QSW-K0086GEZZ	J	Switch	AC
S5003	QSW-K0086GEZZ	J	Switch	AC
S5004	QSW-K0086GEZZ	J	Switch (VC-MH66FPM)	AC
S5005	QSW-K0086GEZZ	J	Switch (VC-MH66FPM)	AC
S5006	QSW-K0086GEZZ	J	Switch (VC-MH66FPM)	AC
S5007	QSW-K0086GEZZ	J	Switch (VC-MH66FPM)	AC
S5008	QSW-K0086GEZZ	J	Switch (VC-MH66FPM)	AC
S5009	QSW-K0086GEZZ	J	Switch	AC
S5010	QSW-K0086GEZZ	J	Switch	AC
S5011	QSW-K0086GEZZ	J	Switch	AC
S5012	QSW-K0086GEZZ	J	Switch (VC-MH66FPM)	AC
SC1	QSOCN1095REZZ	J	Socket, 10pin (VC-MH66FPM)	
SC1	QSOCN1495REZZ	J	Socket, 14pin (VC-MH68FPM/MH69FPM)	AC
SC301	QSOCN0494REZZ	J	Socket, 4pin (VC-M29FPM)	AC
SC301	QSOCN0799REZZ	J	Socket, 7pin (VC-M49FPM)	AC

MISCELLANEOUS PARTS (Continued)

Ref. No.	Part No.	★	Description	Code
SC301	QSOCN1199REZZ	J	Socket, 11pin (VC-MH66/68/69FPM)	AD
SC501	QSOCN0261FJ00	J	Socket, 2pin	AF
SC701	QSOCZ0625CEZZ	J	Socket, 6pin (except VC-MH66FPM)	AC
SC702	QSOCN0795REZZ	J	Socket, 7pin	AC
SC6601	QSOCN0695REZZ	J	Socket, 6pin	AB

—— End of Main ——

DUNTK5411TEV1 (VC-M29FPM/M46FPM)
DUNTK5406TEV6 (VC-MH66FPM)
DUNTK5406TEV5 (VC-MH68FPM/MH69FPM)
TERMINAL UNIT

INTEGRATED CIRCUITS

Ref. No.	Part No.	★	Description	Code
IC2801	VHiBA7630F/1E	J	BA7630F	AM
IC6301	VHiBH7802K/-1	J	BH7802K (VC-MH66/68/69FPM)	AR
IC6801	VHiBA15218F1E	J	BA15218F (VC-MH66/68/69FPM)	AF
IC6802	VHiBU4066CF1E	J	I.C. (VC-MH66/68/69FPM)	AE
IC6803	VHiBA7631F/1E	J	BA7631F (VC-M29FPM/M49FPM)	AK

TRANSISTORS

Ref. No.	Part No.	★	Description	Code
Q2651	VSUN2213///-1	J	UN2213	AA
Q2652	VSUN2113///-1	J	UN2113	AA
Q2653	VS2PB709AR/-1	U	2PB709AR	AA
Q2801	VS2PB709AR/-1	U	2PB709AR	AA
Q2802	VS2PB709AR/-1	U	2PB709AR	AA
Q6301	VSUN2213///-1	J	UN2213 (VC-MH66/68/69FPM)	AA
Q6305	VSDTA144ES/-1	J	DTA144ES (VC-MH66/68/69FPM)	AB
Q6306	VS2SA933SQR1E	J	2SA933SQR (VC-MH66/68/69FPM)	AB
Q6307	VS2PD601AR/-1	U	2PD601AR (VC-MH66/68/69FPM)	AA
Q6308	VSUN2113///-1	J	UN2113 (VC-MH66/68/69FPM)	AA
Q6309	VSDTC144ES/-1	J	DTC144ES (VC-MH66/68/69FPM)	AB
Q6801	VS2SD1306-D1E	J	2SD1306-D (VC-MH66/68/69FPM)	AB
Q6802	VS2SD1306-D1E	J	2SD1306-D	AB
Q6803	VSUN2113///-1	J	UN2113	AA
Q6804	VSUN2213///-1	J	UN2213	AA
Q6805	VSUN2213///-1	J	UN2213 (VC-MH66/68/69FPM)	AA

DIODES

Ref. No.	Part No.	★	Description	Code
D2652	RH-EX0646GEZZ	J	Zener Diode	AA
D2653	RH-EX0646GEZZ	J	Zener Diode	AA
D2654	RH-EX0646GEZZ	J	Zener Diode	AA
D2655	RH-EX0646GEZZ	J	Zener Diode	AA
D2801	RH-EX0646GEZZ	J	Zener Diode	AA
D2802	RH-EX0646GEZZ	J	Zener Diode	AA
D2803	RH-EX0646GEZZ	J	Zener Diode	AA

DIODES (Continued)

Ref. No.	Part No.	★	Description	Code
D2804	RH-EX0646GEZZ	J	Zener Diode	AA
D2805	RH-DX0053GEZZ	J	1SS132	AA
D6301	RH-DX0053GEZZ	J	1SS132 (VC-MH66/68/69FPM)	AA
D6801	RH-EX0611GEZZ	J	Zener Diode (VC-MH66/68/69FPM)	AA

COILS AND TRANSFORMERS

Ref. No.	Part No.	★	Description	Code
L2801	VP-ZK680K0000	J	68μH	AB
L6801	VP-XF330K0000	J	33μH (VC-M29FPM/M49FPM)	AB
L6801	VP-XF120K0000	J	12μH (VC-MH66/68/69FPM)	AB
L6802	VP-XF120K0000	J	12μH (VC-MH66/68/69FPM)	AB
L6803	VP-XF120J0000	J	12μH (VC-M29FPM/M49FPM)	AB
L6803	VP-XF3R3K0000	J	3.3μH (VC-MH66/68/69FPM)	AB
L6804	VP-XF3R3K0000	J	3.3μH (VC-MH66/68/69FPM)	AB
L6805	VP-XF3R3K0000	J	3.3μH	AB
L6806	VP-XF3R3K0000	J	3.3μH (VC-MH66/68/69FPM)	AB
L6807	VP-XF120J0000	J	12μH (VC-M29FPM/M49FPM)	AB
L6807	VP-XF270J0000	J	27μH (VC-MH66/68/69FPM)	AC
L6808	VP-XF270J0000	J	27μH (VC-MH66/68/69FPM)	AC
L6809	VP-XF3R3K0000	J	3.3μH (VC-MH66/68/69FPM)	AB
L6810	VP-XF3R3K0000	J	3.3μH (VC-MH66/68/69FPM)	AB

CAPACITORS

Ref. No.	Part No.	★	Description	Code
C2652	VCKYCY1HB102K	J	1000p 50V Ceramic	AA
C2653	VCKYCY1HB102K	J	1000p 50V Ceramic	AA
C2801	VCEAEA1HW105M	J	1 50V Electrolytic (VC-M29FPM/M49FPM)	AB
C2801	VCEAEM1HW105M	J	1 50V Electrolytic (VC-MH66/68/69FPM)	AB
C2802	VCEA2A0JW477M	J	470 6.3V Electrolytic	AB
C2803	VCEAEA1HW105M	J	1 50V Electrolytic (VC-M29FPM/M49FPM)	AB
C2803	VCEAEM1HW105M	J	1 50V Electrolytic (VC-MH66/68/69FPM)	AB
C2804	VCEA2A0JW477M	J	470 6.3V Electrolytic	AB
C2805	VCEAEM1CW476M	J	47 16V Electrolytic	AB
C2806	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C2807	VCKYCY1AF105Z	J	1 10V Ceramic	AC
C2808	VCKYCY1AF105Z	J	1 10V Ceramic	AC

CAPACITORS (Continued)

Ref. No.	Part No.	★	Description	Code
C2809	VCEAEA0JW227M	J	220 6.3V Electrolytic (VC-MH66/68/69FPM)	AC
C2809	VCEAEM0JW107M	J	100 6.3V Electrolytic (VC-MH66/68/69FPM)	AB
C2810	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C6301	VCKYCY1HB271K	J	270p 50V Ceramic (VC-MH66/68/69FPM)	AA
C6302	VCKYCY1HB271K	J	270p 50V Ceramic (VC-MH66/68/69FPM)	AA
C6303	VCCCCY1HH220J	J	22p 50V Ceramic (VC-MH66/68/69FPM)	AA
C6304	VCCCCY1HH220J	J	22p 50V Ceramic (VC-MH66/68/69FPM)	AA
C6305	VCEAEA1CW106M	J	10 16V Electrolytic (VC-MH66/68/69FPM)	AB
C6306	VCKYCY1EB223K	J	0.022 25V Ceramic (VC-MH66/68/69FPM)	AA
C6307	VCKYCY1HB472K	J	4700p 50V Ceramic (VC-MH66/68/69FPM)	AA
C6308	VCEAEM0JW107M	J	100 6.3V Electrolytic (VC-MH66/68/69FPM)	AB
C6309	VCEAEM0JW476M	J	47 6.3V Electrolytic (VC-MH66/68/69FPM)	AB
C6310	VCKYCY1EB223K	J	0.022 25V Ceramic (VC-MH66/68/69FPM)	AA
C6311	VCEAEA0JW107M	J	100 6.3V Electrolytic (VC-MH66/68/69FPM)	AB
C6312	VCKYCY1HB472K	J	4700p 50V Ceramic (VC-MH66/68/69FPM)	AA
C6313	VCKYCY1EB223K	J	0.022 25V Ceramic (VC-MH66/68/69FPM)	AA
C6314	VCEAEM1CW106M	J	10 16V Electrolytic (VC-MH66/68/69FPM)	AB
C6315	VCEAEM0JW476M	J	47 6.3V Electrolytic (VC-MH66/68/69FPM)	AB
C6316	VCKYCY1HB152K	J	1500p 50V Ceramic (VC-MH66/68/69FPM)	AA
C6317	VCKYCY1HB152K	J	1500p 50V Ceramic (VC-MH66/68/69FPM)	AA
C6319	VCKYCY1HB681K	J	680p 50V Ceramic (VC-MH66/68/69FPM)	AA
C6320	VCE9EA1AW226M	J	22 10V Elect.(N.P.) (VC-MH66/68/69FPM)	AB
C6321	VCE9EA1AW226M	J	22 10V Elect.(N.P.) (VC-MH66/68/69FPM)	AB
C6324	VCKYCY1HB681K	J	680p 50V Ceramic (VC-MH66/68/69FPM)	AA
C6325	VCEAEM1HW475M	J	4.7 50V Electrolytic (VC-MH66/68/69FPM)	AB
C6326	VCEAEM0JW107M	J	100 6.3V Electrolytic (VC-MH66/68/69FPM)	AB
C6327	VCEAEM0JW107M	J	100 6.3V Electrolytic (VC-MH66/68/69FPM)	AB
C6328	VCKYCY1HB152K	J	1500p 50V Ceramic (VC-MH66/68/69FPM)	AA

CAPACITORS (Continued)

Ref. No.	Part No.	★	Description	Code
C6329	VCKYCY1HB152K	J	1500p 50V Ceramic (VC-MH66/68/69FPM)	AA
C6330	VCKYCY1HB331K	J	330p 50V Ceramic (VC-MH68FPM/MH69FPM)	AA
C6331	VCKYCY1HB331K	J	330p 50V Ceramic (VC-MH68FPM/MH69FPM)	AA
C6332	VCKYCY1HF103Z	J	0.01 50V Ceramic (VC-MH66/68/69FPM)	AA
C6333	VCKYCY1AF105Z	J	1 10V Ceramic (VC-MH66/68/69FPM)	AC
C6334	VCKYCY1AF105Z	J	1 10V Ceramic (VC-MH66/68/69FPM)	AC
C6335	VCKYCY1AF105Z	J	1 10V Ceramic (VC-MH66/68/69FPM)	AC
C6336	VCKYCY1AF105Z	J	1 10V Ceramic (VC-MH66/68/69FPM)	AC
C6337	VCKYCY1AF105Z	J	1 10V Ceramic (VC-MH66/68/69FPM)	AC
C6338	VCKYCY1AF105Z	J	1 10V Ceramic (VC-MH66/68/69FPM)	AC
C6339	VCKYCY1AF105Z	J	1 10V Ceramic (VC-MH66/68/69FPM)	AC
C6340	VCKYCY1AF105Z	J	1 10V Ceramic (VC-MH68FPM/MH69FPM)	AC
C6341	VCKYCY1AF105Z	J	1 10V Ceramic (VC-MH68FPM/MH69FPM)	AC
C6604	VCEAEA1CW106M	J	10 16V Electrolytic (VC-MH66/68/69FPM)	AB
C6801	VCEAEA1CW106M	J	10 16V Electrolytic (VC-MH66/68/69FPM)	AB
C6802	VCKYCY1HB681K	J	680p 50V Ceramic (VC-MH66/68/69FPM)	AA
C6803	VCEAEA1CW106M	J	10 16V Electrolytic (VC-MH66/68/69FPM)	AB
C6804	VCEAEM1CW106M	J	10 16V Electrolytic (VC-MH66/68/69FPM)	AB
C6805	VCKYCY1HB681K	J	680p 50V Ceramic (VC-MH66/68/69FPM)	AA
C6806	VCEAEA1CW106M	J	10 16V Electrolytic (VC-MH66/68/69FPM)	AB
C6807	VCEAEA1CW106M	J	10 16V Electrolytic (VC-MH66/68/69FPM)	AB
C6808	VCEAEA1CW106M	J	10 16V Electrolytic (VC-MH66/68/69FPM)	AB
C6809	VCEAEA1CW106M	J	10 16V Electrolytic (VC-MH66/68/69FPM)	AB
C6810	VCEAEM0JW476M	J	47 6.3V Electrolytic (VC-MH66/68/69FPM)	AB
C6811	VCEAEA1CW106M	J	10 16V Electrolytic (VC-M29FPM/M49FPM)	AB
C6812	VCKYCY1HF103Z	J	0.01 50V Ceramic (VC-M29FPM/M49FPM)	AA
C6813	VCEAEM1CW107M	J	100 16V Electrolytic (VC-M29FPM/M49FPM)	AB
C6814	VCKYCY1CF334Z	J	0.33 16V Ceramic (VC-M29FPM/M49FPM)	AA
C6815	VCKYCY1CF334Z	J	0.33 16V Ceramic (VC-M29FPM/M49FPM)	AA
C6816	VCKYCY1CF334Z	J	0.33 16V Ceramic (VC-M29FPM/M49FPM)	AA
C6817	VCKYCY1CF334Z	J	0.33 16V Ceramic (VC-M29FPM/M49FPM)	AA
C6818	VCEAEA1CW106M	J	10 16V Electrolytic (VC-M29FPM/M49FPM)	AB
C6819	VCEAEA1CW106M	J	10 16V Electrolytic (VC-M29FPM/M49FPM)	AB

RESISTORS

Ref. No.	Part No.	★	Description	Code
R2651	VRD-RA2EE821J	J	820 1/4W Carbon	AA
R2652	VRS-CY1JF473J	J	47k 1/16W Metal Oxide	AA
R2654	VRS-CY1JF821J	J	820 1/16W Metal Oxide	AA
R2655	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA
R2656	VRS-CY1JF153J	J	15k 1/16W Metal Oxide	AA
R2657	VRS-CY1JF183J	J	18k 1/16W Metal Oxide	AA
R2801	VRS-CY1JF750J	J	75 1/16W Metal Oxide	AA
R2802	VRS-CY1JF101J	J	100 1/16W Metal Oxide	AA
R2803	VRS-CY1JF750J	J	75 1/16W Metal Oxide	AA
R2804	VRS-CY1JF750J	J	75 1/16W Metal Oxide	AA
R2805	VRS-CY1JF101J	J	100 1/16W Metal Oxide	AA
R2806	VRS-CY1JF750J	J	75 1/16W Metal Oxide	AA
R2807	VRS-CY1JF185J	J	1.8M 1/16W Metal Oxide	AE
R2809	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R2810	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R2811	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R2812	VRD-RA2BE101J	J	100 1/8W Carbon (VC-M29FPM/M49FPM)	AA
R2812	VRS-CY1JF101J	J	100 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R2814	VRD-RA2EE331J	J	330 1/4W Carbon	AA
R2815	VRD-RA2BE101J	J	100 1/8W Carbon	AA
R2816	VRD-RA2EE151J	J	150 1/4W Carbon	AA
R2817	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R2818	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R2820	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R2821	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R2822	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R2823	VRS-CY1JF101J	J	100 1/16W Metal Oxide	AA
R2824	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R2825	VRD-RA2BE223J	J	22k 1/8W Carbon	AA
R6301	VRS-CY1JF223J	J	22k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6302	VRS-CY1JF223J	J	22k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6303	VRS-CY1JF333J	J	33k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6304	VRS-CY1JF333J	J	33k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA

RESISTORS (Continued)

Ref. No.	Part No.	★	Description	Code
R6305	VRS-CY1JF154J	J	150k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6306	VRS-CY1JF331J	J	330 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6307	VRS-CY1JF331J	J	330 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6308	VRS-CY1JF103J	J	10k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6310	VRS-CY1JF102J	J	1k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6311	VRS-CY1JF473J	J	47k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6312	VRS-CY1JF273J	J	27k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6313	VRS-CY1JF273J	J	27k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6314	VRD-RA2BE273J	J	27k 1/8W Carbon (VC-MH66/68/69FPM)	AA
R6315	VRS-CY1JF682J	J	6.8k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6316	VRS-CY1JF225J	J	2.2M 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6321	VRS-CY1JF331J	J	330 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6325	VRD-RA2EE472J	J	4.7k 1/4W Carbon (VC-MH66/68/69FPM)	AA
R6326	VRS-CY1JF330J	J	33 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6327	VRS-CY1JF103J	J	10k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6328	VRS-CY1JF563J	J	56k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6329	VRS-CY1JF183J	J	18k 1/16W Metal Oxide (VC-MH68FPM/MH69FPM)	AA
R6330	VRS-CY1JF683J	J	68k 1/16W Metal Oxide (VC-MH68FPM/MH69FPM)	AA
R6331	VRS-CY1JF683J	J	68k 1/16W Metal Oxide (VC-MH68FPM/MH69FPM)	AA
R6332	VRS-CY1JF183J	J	18k 1/16W Metal Oxide (VC-MH68FPM/MH69FPM)	AA
R6333	VRD-RA2BE102J	J	1k 1/8W Carbon (VC-MH66/68/69FPM)	AA
R6801	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide (VC-M29FPM/M49FPM)	AA
R6801	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6802	VRS-CY1JF822J	J	8.2k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6803	VRS-CY1JF822J	J	8.2k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6804	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide (VC-M29FPM/M49FPM)	AA
R6804	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA

RESISTORS (Continued)

Ref. No.	Part No.	★	Description	Code
R6805	VRS-CY1JF821J	J	820 1/16W Metal Oxide (VC-M29FPM/M49FPM)	AA
R6805	VRS-CY1JF561J	J	560 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6806	VRS-CY1JF561J	J	560 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6807	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide (VC-M29FPM/M49FPM)	AA
R6807	VRS-CY1JF103J	J	10k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6808	VRS-CY1JF183J	J	18k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6809	VRS-CY1JF183J	J	18k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6810	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide (VC-M29FPM/M49FPM)	AA
R6810	VRS-CY1JF103J	J	10k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6811	VRS-CY1JF154J	J	150k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6812	VRS-CY1JF154J	J	150k 1/16W Metal Oxide	AA
R6813	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6814	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide	AA
R6815	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA
R6816	VRS-CY1JF821J	J	820 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6817	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6818	VRS-CY1JF821J	J	820 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6819	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6820	VRS-CY1JF821J	J	820 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6821	VRS-CY1JF822J	J	8.2k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6822	VRS-CY1JF103J	J	10k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6823	VRS-CY1JF103J	J	10k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6824	VRS-CY1JF822J	J	8.2k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6825	VRS-CY1JF821J	J	820 1/16W Metal Oxide	AA
R6826	VRS-CY1JF154J	J	150k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6827	VRS-CY1JF154J	J	150k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6828	VRS-CY1JF154J	J	150k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6829	VRS-CY1JF154J	J	150k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6830	VRS-CY1JF154J	J	150k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA

RESISTORS (Continued)

Ref. No.	Part No.	★	Description	Code
R6831	VRS-CY1JF154J	J	150k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6832	VRS-CY1JF103J	J	10k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6834	VRD-RA2EE471J	J	470 1/4W Carbon (VC-MH66/68/69FPM)	AA
R6835	VRS-CY1JF332J	J	3.3k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6836	VRS-CY1JF332J	J	3.3k 1/16W Metal Oxide (VC-MH66/68/69FPM)	AA
R6841	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA

MISCELLANEOUS PARTS

Ref. No.	Part No.	★	Description	Code
FB2801	VP-XF1R0K0000	J	1μH	AB
FB2802	RBLN-0043CEZZ	J	Balun	AB
J6801	QJAKF0046GEZZ	J	Jack (VC-MH66/68/69FPM)	AF
P6301	QPLGN0778GEZZ	J	Plug, 7pin (VC-MH66FPM)	AC
P6301	QPLGN1178GEZZ	J	Plug, 11pin (VC-MH68FPM/MH69FPM)	AC
SC2801	QSOCZ2185GEZZ	J	Socket, 21pin	AF
SC2802	QSOCZ2185GEZZ	J	Socket, 21pin	AF
SC6301	QSOCZ1531GEZZ	J	Socket, 15pin	AD
SC6302	QSOCZ0431GEZZ	J	Socket, 4pin (VC-MH66/68/69FPM)	AC
SC6303	QSOCZ1031GEZZ	J	Socket, 10pin (VC-M29FPM/M49FPM)	AC
SC6303	QSOCZ1431GEZZ	J	Socket, 14pin (VC-MH66/68/69FPM)	AD

—— End of Terminal ——

DUNTK5409TEV2 (VC-MH66FPM)
DUNTK5409TEV5 (VC-MH68FPM)
DUNTK5409TEV6 (VC-MH69FPM)
MPX UNIT

INTEGRATED CIRCUITS

Ref. No.	Part No.	★	Description	Code
IC1701	VHiSA7283G2-1	J	SAA7283GP/M2	BM
IC1902	VHiTDA9840T-1	J	TDA9840T (except VC-MH66FPM)	AS

TRANSISTORS

Ref. No.	Part No.	★	Description	Code
Q1701	VS2SC2735//1E	J	2SC2735	AC
Q1702	VS2SA1271-Y-1	J	2SA1271-Y	AB
Q1703	VSUN2212///-1	J	UN2212	AA
Q6701	VS2C3939SQR-1	J	2SC3939SQR (VC-MH69FPM)	AC

DIODES

Ref. No.	Part No.	★	Description	Code
D1701	RH-DX0053GEZZ	J	1SS132	AA
D1720	VHDOF4076//-1	J	OF4076	AC

PACKAGED CIRCUIT

Ref. No.	Part No.	★	Description	Code
X1701	RCRSB0183GEZZ	J	Crystal, 8.192MHz	AM
X1901	RCRSB0174GEZZ	J	Crystal, 10MHz (except VC-MH66FPM)	AF

COILS AND TRANSFORMERS

Ref. No.	Part No.	★	Description	Code
L1701	VP-ZK6R8K0000	J	6.8μH	AA
L1702	VP-ZK6R8K0000	J	6.8μH	AA
L1703	VP-ZK6R8K0000	J	6.8μH	AA
L1704	VP-XF6R8K0000	J	6.8μH	AB
L1705	VP-ZK6R8K0000	J	6.8μH	AA
L1706	VP-ZK6R8K0000	J	6.8μH	AA
L6701	VP-ZK221K0000	J	220μH (VC-MH69FPM)	AB
T1902	RCiLi0489CEZZ	J	Coil (except VC-MH66FPM)	AE
T6701	RTRNH0048GEZZ	J	OSC. Transformer (VC-MH69FPM)	AE

CONTROLS

Ref. No.	Part No.	★	Description	Code
R1961	RVR-M4809GEZZ	J	4.7k(B), Sub CH Level Adj. (except VC-MH66FPM)	AC

CAPACITORS

Ref. No.	Part No.	★	Description	Code
C1701	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA

CAPACITORS (Continued)

Ref. No.	Part No.	★	Description	Code
C1702	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C1703	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C1704	VCKYD41HB391K	J	390p 50V Ceramic	AA
C1705	VCCCCY1HH100D	J	10p 50V Ceramic	AA
C1706	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C1707	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C1708	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C1709	VCKYCY1CF334Z	J	0.33 16V Ceramic	AA
C1713	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C1717	VCKYCY1CF334Z	J	0.33 16V Ceramic	AA
C1718	VCQYTA1HM473J	J	0.047 50V Mylar	AA
C1720	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C1721	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C1722	VCEAEM0JW476M	J	47 6.3V Electrolytic	AB
C1723	VCKYCY1HB221K	J	220p 50V Ceramic	AA
C1724	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C1725	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C1726	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C1727	VCEAEM1HW105M	J	1 50V Electrolytic	AB
C1728	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C1729	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C1730	VCEAEM1HW334M	J	0.33 50V Electrolytic	AB
C1731	VCKYCY1EB223K	J	0.022 25V Ceramic	AA
C1732	VCCCCY1HH101J	J	100p 50V Ceramic	AA
C1733	VCCCCY1HH101J	J	100p 50V Ceramic	AA
C1734	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C1735	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C1736	VCEAEM1HW474M	J	0.47 50V Electrolytic	AB
C1737	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C1738	VCEAEM1CW106M	J	10 16V Electrolytic	AB
C1739	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C1740	VCEAEM0JW476M	J	47 6.3V Electrolytic	AB
C1748	VCEAEM0JW476M	J	47 6.3V Electrolytic	AB
C1749	VCEAEM0JW336M	J	33 6.3V Electrolytic	AA
C1906	VCCCCY1HH100D	J	10p 50V Ceramic (except VC-MH66FPM)	AA
C1907	VCCCCY1HH100D	J	10p 50V Ceramic (except VC-MH66FPM)	AA
C1908	VCE9EA1AW106M	J	10 10V Elect.(N.P.) (except VC-MH66FPM)	AB
C1909	VCEAEA0JW227M	J	220 6.3V Electrolytic (except VC-MH66FPM)	AC
C1910	VCEAEM1CW106M	J	10 16V Electrolytic (except VC-MH66FPM)	AB
C1911	VCKYCY1HF103Z	J	0.01 50V Ceramic (except VC-MH66FPM)	AA
C1912	VCKYCY1EF104Z	J	0.1 25V Ceramic (except VC-MH66FPM)	AA
C1913	VCCCCY1HH470J	J	47p 50V Ceramic (except VC-MH66FPM)	AA
C1914	VCEAEA1CW106M	J	10 16V Electrolytic (except VC-MH66FPM)	AB
C1916	VCEAEA1CW106M	J	10 16V Electrolytic	AB
C1917	VCEAEA1CW106M	J	10 16V Electrolytic	AB

CAPACITORS (Continued)

Ref. No.	Part No.	★	Description	Code
C1918	VCKYCY1EB103K	J	0.01 25V Ceramic (except VC-MH66FPM)	AA
C1919	VCKYCY1EB103K	J	0.01 25V Ceramic (except VC-MH66FPM)	AA
C1920	VCKYCY1HF103Z	J	0.01 50V Ceramic (except VC-MH66FPM)	AA
C1921	VCEAEM0JW476M	J	47 6.3V Electrolytic (except VC-MH66FPM)	AB
C1930	VCKYCY1EF104Z	J	0.1 25V Ceramic (except VC-MH66FPM)	AA
C1931	VCKYCY1EF104Z	J	0.1 25V Ceramic (except VC-MH66FPM)	AA
C1939	VCCCCY1HH100D	J	10p 50V Ceramic (except VC-MH66FPM)	AA
C1940	VCCCCY1HH100D	J	10p 50V Ceramic (except VC-MH66FPM)	AA
C6701	VCKYCY1HF103Z	J	0.01 50V Ceramic (VC-MH69FPM)	AA
C6702	VCKYCY1HF103Z	J	0.01 50V Ceramic (VC-MH69FPM)	AA
C6703	VCQPKA2AA333J	J	0.033 100V Mylar (VC-MH69FPM)	AB
C6704	VCKYCY1HF103Z	J	0.01 50V Ceramic (VC-MH69FPM)	AA
C6705	VCEAEM1CW476M	J	47 16V Electrolytic (VC-MH69FPM)	AB

RESISTORS

Ref. No.	Part No.	★	Description	Code
R1701	VRS-CY1JF392J	J	3.9k 1/16W Metal Oxide	AA
R1702	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R1703	VRS-CY1JF331J	J	330 1/16W Metal Oxide	AA
R1704	VRS-CY1JF560J	J	56 1/16W Metal Oxide	AA
R1705	VRS-CY1JF151J	J	150 1/16W Metal Oxide	AA
R1706	VRS-CY1JF101J	J	100 1/16W Metal Oxide	AA
R1707	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R1710	VRS-CY1JF182J	J	1.8k 1/16W Metal Oxide	AA
R1711	VRS-CY1JF333J	J	33k 1/16W Metal Oxide	AA
R1712	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R1713	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R1714	VRS-CY1JF105J	J	1M 1/16W Metal Oxide	AA
R1715	VRS-CY1JF684J	J	680k 1/16W Metal Oxide	AA
R1716	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
R1719	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
R1721	VRS-CY1JF152J	J	1.5k 1/16W Metal Oxide	AA
R1913	VRS-CY1JF331J	J	330 1/16W Metal Oxide (except VC-MH66FPM)	AA
R1914	VRS-CY1JF333J	J	33k 1/16W Metal Oxide (except VC-MH66FPM)	AA
R1915	VRD-RA2BE472J	J	4.7k 1/8W Carbon (except VC-MH66FPM)	AA
R1916	VRS-CY1JF272J	J	2.7k 1/16W Metal Oxide	AA
R1918	VRD-RA2BE331J	J	330 1/8W Carbon	AA
R1960	VRS-CY1JF392J	J	3.9k 1/16W Metal Oxide (except VC-MH66FPM)	AA

RESISTORS (Continued)

Ref. No.	Part No.	★	Description	Code
R1962	VRS-CY1JF122J	J	1.2k 1/16W Metal Oxide (except VC-MH66FPM)	AA
R6701	VRS-CY1JF223J	J	22k 1/16W Metal Oxide (VC-MH69FPM)	AA
R6702	VRD-RA2BE680J	J	68 1/8W Carbon (VC-MH69FPM)	AA
R6703	VRG-SC2EB4R7J	J	4.7 1/4W Fuse Resistor (VC-MH69FPM)	AB

MISCELLANEOUS PARTS

P1701	QPLGN1180GEZZ	J	Plug, 11pin	AC
P6701	QPLGN0378GEZZ	J	Plug, 3pin (VC-MH69FPM)	AB
SC1701	QSOCN1495REZZ	J	Socket, 14pin	AC

— End of MPX —

DUNTK5410TEV1 (VC-MH68FPM) DUNTK5410TEV0 (VC-MH69FPM) F-AV, F-AV/SAT. UNIT

INTEGRATED CIRCUITS

Ref. No.	Part No.	★	Description	Code
IC801	RH-iX1226GEZZ	U	MN150837SGBA (VC-MH69FPM)	AR

TRANSISTORS

Q801	VS2SD468-C/-1	J	2SD468-C (VC-MH69FPM)	AD

DIODES

D801	RH-PX0224GEZZ	J	Photo Diode (VC-MH69FPM)	AE
D802	RH-PX0224GEZZ	J	Photo Diode (VC-MH69FPM)	AE
D803	RH-PX0224GEZZ	J	Photo Diode (VC-MH69FPM)	AE

COILS AND TRANSFORMERS

FL801	RFiLC0091GEZZ	J	Filter (VC-MH69FPM)	AD
L801	VP-DF221K0000	J	220μH (VC-MH69FPM)	AB
L8801	VP-XF3R3K0000	J	3.3μH	AB
L8802	VP-XF3R3K0000	J	3.3μH	AB

CAPACITORS

C801	VCCCCY1HH470J	J	47p 50V Ceramic (VC-MH69FPM)	AA
C802	VCCCCY1HH470J	J	47p 50V Ceramic (VC-MH69FPM)	AA
C803	VCKYCY1HF103Z	J	0.01 50V Ceramic (VC-MH69FPM)	AA
C804	VCEAEM0JW476M	J	47 6.3V Electrolytic (VC-MH69FPM)	AB
C805	VCKYCY1HF103Z	J	0.01 50V Ceramic (VC-MH69FPM)	AA
C806	VCKYCY1HF103Z	J	0.01 50V Ceramic (VC-MH69FPM)	AA
C807	VCEA2A1CW227M	J	220 16V Electrolytic (VC-MH69FPM)	AB
C8801	VCKYCY1HB331K	J	330p 50V Ceramic	AA
C8802	VCKYCY1HB331K	J	330p 50V Ceramic	AA

RESISTORS

R801	VRG-SC2EB100J	J	10 1/4W Fuse Resistor (VC-MH69FPM)	AB

RESISTORS (Continued)

Ref. No.	Part No.	★	Description	Code
R802	VRD-RA2BE331J	J	330 1/8W Carbon (VC-MH69FPM)	AA
R8804	VRS-CY1JF101J	J	100 1/16W Metal Oxide	AA
R8805	VRS-CY1JF750J	J	75 1/16W Metal Oxide	AA

MISCELLANEOUS PARTS

Ref. No.	Part No.	★	Description	Code
J8801	QJAKG0003AJZZ	V	Jack	AM
SC8101	QSOCN0598REZZ	J	Socket, 5pin (VC-MH68FPM)	AC
SC8101	QSOCN1298REZZ	J	Socket, 12pin (VC-MH69FPM)	AF

—— End of F-AV, F-AV/SAT. ——

DUNTK5407TEV0
SECAM UNIT

INTEGRATED CIRCUITS

Ref. No.	Part No.	★	Description	Code
IC5301	VHiTA1238N/-1	J	TA1238N	AH

TRANSISTORS

Ref. No.	Part No.	★	Description	Code
Q5301	VS2C1740SQR1E	J	2SC1740SQR	AC
Q5302	VS2C1740SQR1E	J	2SC1740SQR	AC
Q5303	VSDTC144ES/-1	J	DTC144ES	AB
Q5304	VSDTC144ES/-1	J	DTC144ES	AB

PACKAGED CIRCUIT

Ref. No.	Part No.	★	Description	Code
X5301	RCRSB0225GEZZ	J	Crystal, 4.286MHz	AH

COILS AND TRANSFORMERS

Ref. No.	Part No.	★	Description	Code
L5301	VP-MK101K0000	J	100µH	AB

CAPACITORS

Ref. No.	Part No.	★	Description	Code
C5301	VCKYD41CY103N	J	0.01 16V Ceramic	AA
C5302	VCKYD41HF104Z	J	0.1 50V Ceramic	AA
C5303	VCKYD41HF104Z	J	0.1 50V Ceramic	AA
C5304	VCCCD41HH120J	J	12p 50V Ceramic	AA
C5305	VCKYD41CY103N	J	0.01 16V Ceramic	AA
C5306	VCTYPA1EX333K	J	0.033 25V	AA
C5307	VCEAEA1HW225M	J	2.2 50V Electrolytic	AB
C5308	VCKYD41HF104Z	J	0.1 50V Ceramic	AA
C5309	VCKYD41HF104Z	J	0.1 50V Ceramic	AA
C5310	VCKYD41CY103N	J	0.01 16V Ceramic	AA
C5311	VCKYD41CY103N	J	0.01 16V Ceramic	AA
C5312	VCKYD41CY103N	J	0.01 16V Ceramic	AA
C5313	VCEAEA0JW476M	J	47 6.3V Electrolytic	AB
C5314	VCKYD41HF473Z	J	0.047 50V Ceramic	AA
C5315	VCKYD41HF473Z	J	0.047 50V Ceramic	AA
C5316	VCKYD41CY103N	J	0.01 16V Ceramic	AA
C5317	VCEAEA1HW474M	J	0.47 50V Electrolytic	AB
C5318	VCKYD41HF473Z	J	0.047 50V Ceramic	AA
C5319	VCKYD41CY103N	J	0.01 16V Ceramic	AA

RESISTORS

Ref. No.	Part No.	★	Description	Code
R5301	VRD-RA2BE562J	J	5.6k 1/8W Carbon	AA
R5302	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
R5303	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
R5304	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
R5305	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
R5306	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
R5307	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
R5308	VRD-RA2BE101J	J	100 1/8W Carbon	AA
R5309	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
R5310	VRD-RA2BE103J	J	10k 1/8W Carbon	AA

RESISTORS (Continued)

Ref. No.	Part No.	★	Description	Code
R5311	VRD-RA2BE273J	J	27k 1/8W Carbon	AA
R5312	VRD-RA2BE222J	J	2.2k 1/8W Carbon	AA
R5313	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
R5314	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
R5315	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
R5316	VRD-RA2BE183J	J	18k 1/8W Carbon	AA
R5317	VRD-RA2BE273J	J	27k 1/8W Carbon	AA
R5318	VRD-RA2BE101J	J	100 1/8W Carbon	AA
R5320	VRD-RA2BE101J	J	100 1/8W Carbon	AA
R5321	VRD-RA2BE102J	J	1k 1/8W Carbon	AA

MISCELLANEOUS PARTS

Ref. No.	Part No.	★	Description	Code
P5301	QPLGN0244FJ00	J	Plug, 2pin	AF

—— End of SECAM ——

DUNTK5381TEV2 OPERATION UNIT (except VC-MH66FPM)

MISCELLANEOUT PARTS

Ref. No.	Part No.	★	Description	Code
P8801	QPLGZ0626CEZZ	J	Plug, 6pin	AC
S8801	QSW-K0086GEZZ	J	Switch, Pause/Stop	AC
S8802	QSW-K0086GEZZ	J	Switch, Play	AC
S8803	QSW-K0086GEZZ	J	Switch, Rec	AC
S8804	QSW-K0086GEZZ	J	Switch, Stop	AC
S8815	QSW-Z0001AJZZ	V	Switch, Shuttle	AQ

—— End of Operation ——

MECHANISM CHASSIS PARTS

Ref. No.	Part No.	★	Description	Code
1	LBNDK1009GEZZ	J	Tension Band Ass'y	AH
2	LBOSZ1001GEZZ	J	Tension Arm Boss	AC
3	LBOSZ1002GEZZ	J	Slow Brake Boss	AD
4	LBOSZ1003GEZZ	J	Cassette Stay L	AC
5	LCHSM0158GEZZ	J	Main Chassis Ass'y	AY
6	LHLDZ1958GEZZ	J	Loading Motor Block	AG
7	LPOLM0056GEZZ	J	Supply Pole Base Ass'y	AM
8	LPOLM0057GEZZ	J	Take-Up Pole Base Ass'y	AM
9	MLEVF0459GEZZ	J	Take-Up Loading Arm Ass'y	AF
10	MLEVF0461GEZZ	J	Supply Loading Arm Ass'y	AF
11	MLEVF0463GEZZ	J	Pinch Drive Lever Ass'y	AG
12	MLEVF0464GEZZ	J	Pinch Roller Lever Ass'y	AW
15	MLEVF0467GEZZ	J	Tension Arm Ass'y	AK
16	MLEVF0468GEFW	J	Audio/Control Head Arm	AG
17	MLEVP0271GEZZ	J	Sifter Drive Lever	AE
18	MLEVP0272GEZZ	J	Pinch Double Action Lever	AD
19	MLEVP0273GEZZ	J	Reverse Guide Lever Ass'y	AL
20	MLEVP0275GEZZ	J	Reverse Drive Lever	AB
21	MLEVP0276GEZZ	J	Slow Brake	AE
22	MLEVP0290GEZZ	J	Open Lever	AD
23	MLEVP0278GEZZ	J	Clutch Lever	AE
24	MLEVP0288GEZZ	J	Supply Main Brake Ass'y	AF
25	MLEVP0289GEZZ	J	Take-up Main Brake Ass'y	AF
26	CLEVP0287AJZZ		Auto Head Cleaner Ass'y (except VC-M29FPM)	AG
27	MSLiP0008GEZZ	J	Sifter	AH
28	MSPRC0205AJFJ	V	Audio/Control Head Spring	AC
29	MSPRD0175GEFJ	J	Reverse Guide Spring	AE
30	MSPRT0402GEFJ	J	Loading Double Action Spring	AE
31	MSPRT0403GEFJ	J	Pinch Double Action Spring	AD
33	MSPRT0405GEFJ	J	Tension Spring	AE
34	NBLTK0067AJ00	V	Drive Belt	
35	NDAiV1070GE00	J	Reel Disk	AE
36	NGERH1267GEZZ	J	Loading Connect Gear	AD
37	NGERH1268GE00	J	Master Cam	AE
38	NGERH1269GEZZ	J	Cassette Control Drive Gear	AD
39	NGERH1270GEZZ	J	Take-Up Loading Gear	AF
40	NGERH1271GEZZ	J	Supply Loading Gear	AD
41	NGERH1272GEZZ	J	Pinch Drive Cam	AE
42	NGERH1289GEZZ	J	Supply Reel Relay Gear	AE
43	NGERH1290GEZZ	J	Take-Up Reel Relay Gear	AE
44	NGERW1062GEZZ	J	Worm Gear	AD
45	NGERW1063GEZZ	J	Worm Wheel Gear	AD
46	NiDR-0015GEZZ	J	Idler Wheel Ass'y	AK
47	NPLYV0160GEZZ	J	Motor Pulley	AE
48	NPLYV0156GEZZ	J	Limitter Pulley Ass'y	AM
49	NROLP0110GEZZ	J	Guide Roller	AH
50	NSFTP0034GEZZ	J	Tension Pole Adjuster	AA
51	PGUMM0043GEZZ	J	Damper Rubber	AB
52	PREFL1007GEZZ	J	Light Guide	AE
53	QCNW-7860GEZZ	V	FFC For Drum Motor	AG
54	QCNW-7501GEZZ	J	Lead Wire For Loading Motor	AD
55	QCNW-0272AJZZ	V	FFC For Audio/Control Head	AF
56	QPWBF5243AJZZ	V	Audio/Control Head PWB	AE
57	QSOCN0605REN1	J	Socket, 6 pin	AB
58	RHEDT0031GEZZ	J	Full Erase Head	AH
59	RHEDU0085GEZZ	J	Audio/Control Head Ass'y	BA
60	RMOTM1062GEZZ	J	Loading Motor	AP
61	RMOTN2053GEZZ	J	Capstan Motor	BF
62	RMOTP1129GEZZ	J	Drum Drive Motor	AX
63	DDRMW0014TEV2	U	Upper And Lower Drum Ass'y (VC-M29FPM)	BN
63	DDRMW0015TEV3	U	Upper And Lower Drum Ass'y (VC-M49FPM)	BR
63	DDRMW0016TEV1	U	Upper And Lower Drum Ass'y (VC-MH66FPM/ MH68FPM/MH69FPM)	BY
64	MSPRC0194GEFJ	J	Drum Earth Brush Spring	AA
65	QBRSK0034GEZZ	J	Drum Earth Brush	AD
66	XBPSD26P05J00	J	Drum Drive Motor Mounting Screw (SW2.6P+5S)	AA
67	PGiDC0055GEFW	J	Drum Base	AL
68	MSPRC0213GEFJ	J	Earth Spring	AC

—— End of Mechanism Chassis Parts ——

CASSETTE HOUSING CONTROL PARTS

Ref. No.	Part No.	★	Description	Code
300	CHLDX3074GE02	J	Cassette Housing Control Ass'y	AX
301	LANGF9592GEFW	J	Upper Plate	AL
302	LHLDX1028GE00	J	Frame (L)	AH
303	LHLDX1029GE00	J	Frame (R)	AH
304	LHLDX1030GEZZ	J	Holder (L)	AE
305	LHLDX1031GEZZ	J	Holder (R)	AE
306	MLEVF0469GEFW	J	Proof Lever (R)	AE
307	MLEVP0281GE00	J	Door Open Lever	AD
308	MSLiF0073GEFW	J	Slider	AK
309	MSPRD0151GEFJ	J	Proof Lever (R) Spring	AB
310	MSPRD0166GEFJ	J	Drive Gear (R) Spring	AE
311	MSPRP0159GEFJ	J	Cassette Spring	AD
312	MSPRT0381GEFJ	J	Double Action Spring	AB
313	NGERH1278GEZZ	J	Drive Gear (L)	AE
314	NGERH1279GEZZ	J	Drive Gear (R)	AE
315	NGERR1008GE00	J	Double Action Rack Gear	AE
316	NGERR3005GEFW	J	Drive Angle Gear	AG
317	NSFTD0041GEFD	J	Main Shaft	AF

—— End of Cassette Housing Control Parts ——

SCREWS, NUTS AND WASHERS

Ref. No.	Part No.	★	Description	Code
200	LX-XZ3030GEFD	J	Set Screw	AC
201	XBPSD26P08000	J	Tilt Adjusting Screw	AA
202	LX-HZ3082GEZZ	J	Audio/Control Head Screw	AD
203	XHPSD26P06000	J	Screw, 2.6P+6S (For Capstan Motor)	AA
204	XBPSD30P05J00	J	Screw, SW2.6P+5S (For Loading Motor)	AA
205	XHPSD26P06WS0	J	Screw, C2.6P+6S (For Loading Motor Block)	AA
206	XHPSD26P08WS0	J	Screw, C2.6P+8S (For F/E Head)	AA
207	XHPSD30P08WS0	J	Screw, C3.0P+8S (For Drum Base)	AA
208	XRESJ40-06000	J	E-Ring, E-4	AA
209	XWHJZ52-05095	J	Washer, W5.2-9.5-0.5 (Reel Hight Adj.)	AD
210	XWHJZ52-03095	J	Washer, W5.2-9.5-0.3 (Reel Hight Adj.)	AD
211	XWHJZ52-04095	J	Washer, W5.2-9.5-0.4 (Reel Hight Adj.)	AD
212	XWHJZ52-06095	J	Washer, W5.2-9.5-0.6 (Reel Hight Adj.)	AD
213	XWHJZ52-07095	J	Washer, W5.2-9.5-0.7 (Reel Hight Adj.)	AD
214	PSPAP0009GEZZ	J	Reverse Guide Adjusting Nut	AA
215	LX-WZ1003GE00	J	CUT Washer	AA
216	LX-WZ1041GE00	J	CUT Washer	AA
217	LX-WZ1073GE00	J	CUT Washer	AB
218	XBPSD30P08J00	J	Drum Base Mounting Screw	AA

—— End of Screws, Nuts And Washers ——

MECHANICAL PARTS

Ref. No.	Part No.	★	Description	Code
601	GCABB1180UMZZ	U	Main Frame	AN
602	GCOVA2037UMZZ	U	Antenna Terminal Cover (VC-M29FPM/M49FPM)	AE
602	GCOVA2038UMZZ	U	Antenna Terminal Cover (VC-MH66FPM/MH68FPM/ MH69FPM)	AE
603	GCABA3112UMSM	U	Top Cabinet (VC-MH66FPM)	AU
603	GCABA3112UMSY	U	Top Cabinet (except VC-MH66FPM)	AU
604	GBDYU3104UMFW	U	Bottom Plate	AK
605	PFLT-0016AJZZ	U	Foot Felt	AB
607	XHPSD30P06WS0	J	Screw	AA
608	LX-HZ3087GEFN	J	Screw	AB
609	XEBSD30P12000	J	Screw	AA
610	XJPSD30P10WS0	J	Screw	AA
611	LHLDZ1938UMZZ	U	NICAM/Hi-Fi Holder (VC-MH66FPM/MH68FPM/ MH69FPM)	AC
614	DLAB-3354TEV5	U	Label Ass'y (VC-M29FPM)	–
614	DLAB-3354TEV6	U	Label Ass'y (VC-M49FPM)	–
614	DLAB-3359TEV1	U	Label Ass'y (VC-MH66FPM)	–
614	DLAB-3354TEV3	U	Label Ass'y (VC-MH68FPM)	–
614	DLAB-3354TEV4	U	Label Ass'y (VC-MH69FPM)	–
615	XESSF30P12000	J	Screw	AA
617	PSLDM4531UMFW	U	H/A Shield	AA
618	LX-BZ3014GEFD	J	Screw	AA
619	PSLDM4518UMFW	U	H/A Shield	AB
620	PSPAZ0532AJZZ	V	Spacer	AD
621	XJBSD30P20000	J	Secrew (VC-MH66FPM/ MH68FPM/MH69FPM)	
622	LHLDP1168AJZZ	V	SAT.LED Holder (VC-MH69FPM)	AG

—— End of Mechanical Parts ——

FRONT PANEL PARTS

Ref. No.	Part No.	★	Description	Code
501	CPNLC2258TEV0	U	Front Panel Ass'y (VC-M29FPM)	AX
501	CPNLC2259TEV0	U	Front Panel Ass'y (VC-M49FPM)	AX
501	CPNLC2255TEV0	U	Front Panel Ass'y (VC-MH66FPM)	AX
501	CPNLC2256TEV0	U	Front Panel Ass'y (VC-MH68FPM)	
501	CPNLC2256TEV1	U	Front Panel Ass'y (VC-MH69FPM)	AX
501-1	HPNLC2258UMSA	U	Front Panel (VC-M29FPM)	AS
501-1	HPNLC2259UMSA	U	Front Panel (VC-M49FPM)	AS
501-1	HPNLC2255UMSA	U	Front Panel (VC-MH66FPM)	AS
501-1	HPNLC2256UMSA	U	Front Panel (VC-MH68FPM/MH69FPM)	AS
501-2	HBDGB1008AJSA	V	SHARP Badge (VC-M29FPM/M49FPM/ MH66FPM)	AE
501-2	HBDGB1010AJSA	V	SHARP Badge (VC-MH68FPM/MH69FPM)	AD
501-3	HDECQ1677UMSA	U	Cassette Flap (VC-M29FPM)	AF
501-3	HDECQ1681UMSA	U	Cassette Flap (VC-M49FPM)	AF
501-3	HDECQ1675UMSA	U	Cassette Flap (VC-MH66FPM)	AF
501-3	HDECQ1671UMSA	U	Cassette Flap (VC-MH68FPM/MH69FPM)	AF
501-4	HDECQ1631UMSA	U	Window Dec. (VC-M29FPM/M49FPM)	AF
501-4	HDECQ1599UMSA	U	Window Dec. (VC-MH66FPM)	AF
501-4	HDECQ1597UMSA	U	Window Dec. (VC-MH68FPM/MH69FPM)	AF
501-5	HDECQ1604UMSA	U	Side Dec.(L) (VC-M29FPM)	AD
501-5	HDECQ1604UMSC	U	Side Dec.(L) (VC-M49FPM)	AD
501-5	HDECQ1672UMSA	U	Window Dec. (L) (VC-MH68FPM)	AF
501-5	HDECQ1674UMSA	U	Side Dec. (L) (VC-MH69FPM)	AF
501-6	HDECQ1605UMSA	U	Side Dec.(R) (VC-M29FPM)	AD
501-6	HDECQ1605UMSC	U	Side Dec.(R) (VC-M49FPM)	AD
501-6	HDECQ1673UMSA	U	Side Dec. (R) (VC-MH68FPM/MH69FPM)	AF
501-7	HDECQ1609UMZZ	U	R/C Cover (VC-M29FPM/M49FPM)	AE

Ref. No.	Part No.	★	Description	Code
501-7	HDECQ1610UMZZ	U	R/C Cover (VC-MH66FPM)	AE
501-7	HDECQ1608AJZZ	V	R/C Cover (VC-MH68FPM/MH69FPM)	AD
501-8	JBTN-2796UMSA	U	Operate Button (VC-M29FPM/M49FPM)	AC
501-8	JBTN-2799UMSD	U	Operate Button (VC-MH66FPM)	AD
501-8	JBTN-2793UMSA	U	Operate Button (VC-MH68FPM/MH69FPM)	AC
501-9	JBTN-2797UMSA	U	CH/SET Button (VC-M29FPM/M49FPM)	AF
501-9	JBTN-2800UMSD	U	CH/SET Button (VC-MH66FPM)	AF
501-9	JBTN-2794UMSA	U	CH/SET Button (VC-MH68FPM/MH69FPM)	AC
501-10	JBTN-2798UMSA	U	Rec Button (VC-M29FPM/M49FPM)	AC
501-11	MSPRD0103AJFJ	V	Cassette Spring	AB
501-12	JBTN-2830UMSD	U	Play Button (VC-MH66FPM)	AE
501-13	JBTN-2811UMSD	U	Stop Button (VC-MH66FPM)	AF
502	JBTN-2828UMSA	U	Play Button (VC-M29FPM/M49FPM/ MH68FPM/MH69FPM)	AF
503	JKNBK1101UMSA	U	Dial (VC-M29FPM/M49FPM)	AD
503	JKNBK1100AJSL	U	Dial (VC-MH68FPM/MH69FPM)	AE
504	LHLDZ1993UMZZ	U	Button Holder (VC-M29FPM/M49FPM/ MH68FPM/MH69FPM)	AD
501-14	LHLDZ1994UMZZ	U	Button Holder (VC-MH66FPM)	AD
501-15	GCOVA2029AJZZ	V	SAT. LED Cover (VC-MH69FPM)	AF

—— End of Front Panel Parts ——

SUPPLIED ACCESSORIES

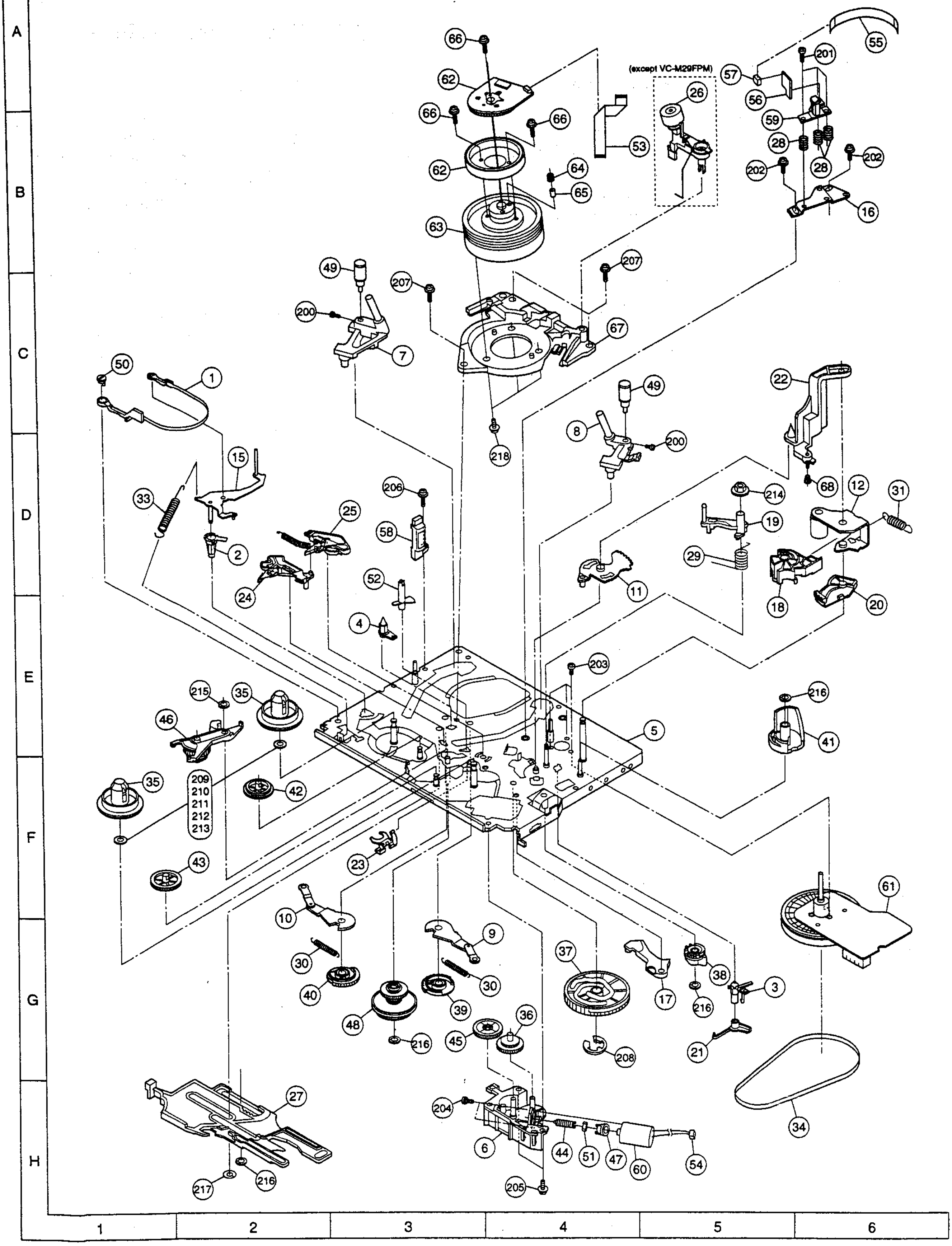
ACCESORIES

Ref. No.	Part No.	★	Description	Code
	QCNW-7870UMZZ	U	75ohm Coaxial Cable	AH
	RRMCG0188AJSA	U	Infrared Remote Control Unit (VC-M29FPM/MH66FPM)	AV
	RRMCG0187AJSA	U	Infrared Remote Control Unit (VC-M49FPM/MH68FPM/ MH69FPM)	
	93GHR22172001	U	Battery Cover, Infrared Remote Control Unit (VC-M29FPM/MH66FPM)	—
	90A64E201013	U	Battery Cover, Infrared Remote Control Unit (VC-M49FPM/MH68FPM/ MH69FPM)	—
	QCNW-7861UMZZ	U	RGB Cable	
	TiNS-3112UMZZ	U	Operation Manual (VC-M29FPM/M49FPM)	AM
	TiNS-3113UMZZ	U	Operation Manual (VC-MH68FPM/MH69FPM)	AG
	TiNS-3114UMZZ	U	Operation Manual (VC-MH66FPM)	

—— End of Supplied Accessories ——

11. EXPLODED VIEWS

MECHANISM CHASSIS PARTS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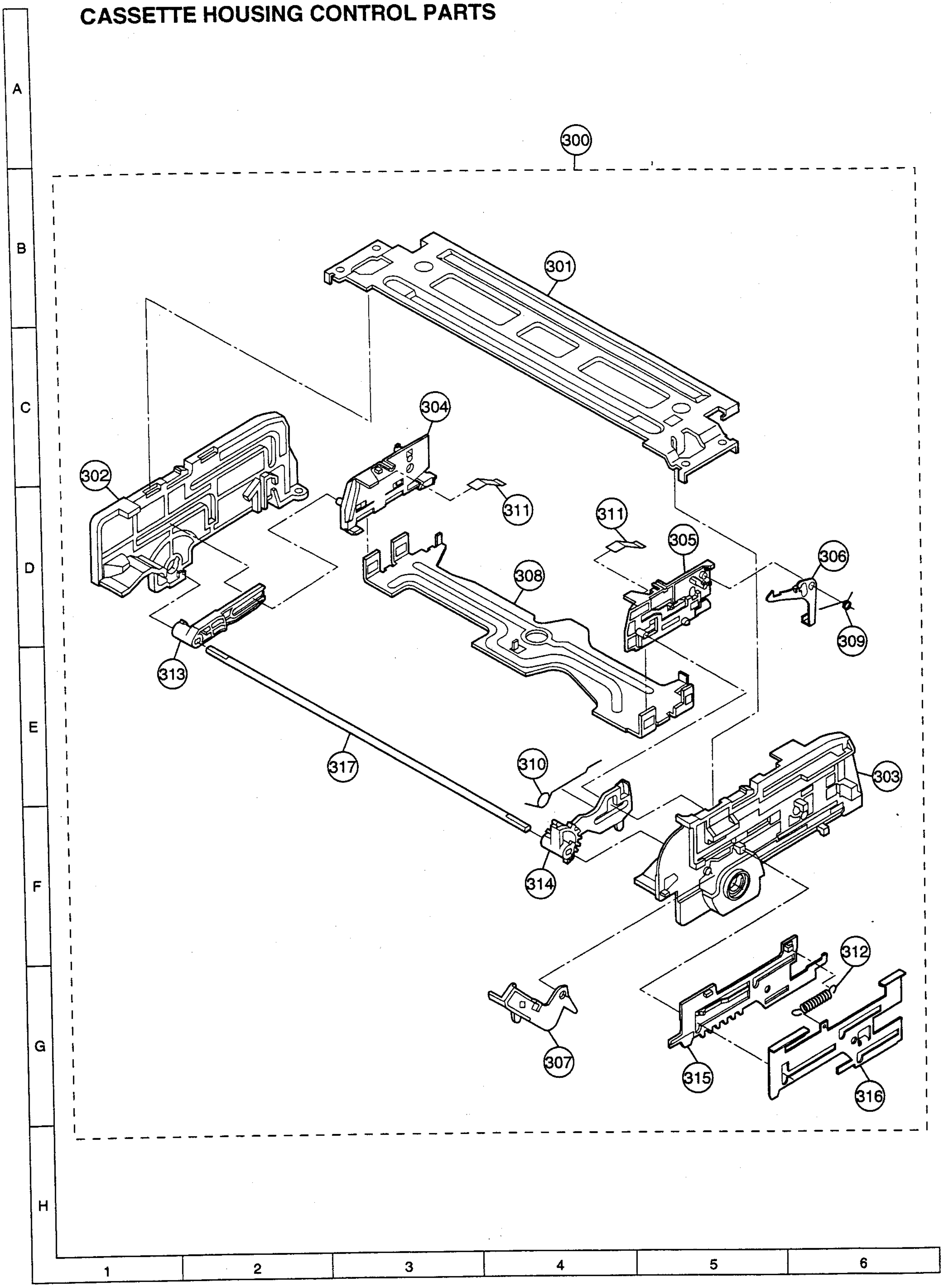
CASSETTE HOUSING CONTROL PARTS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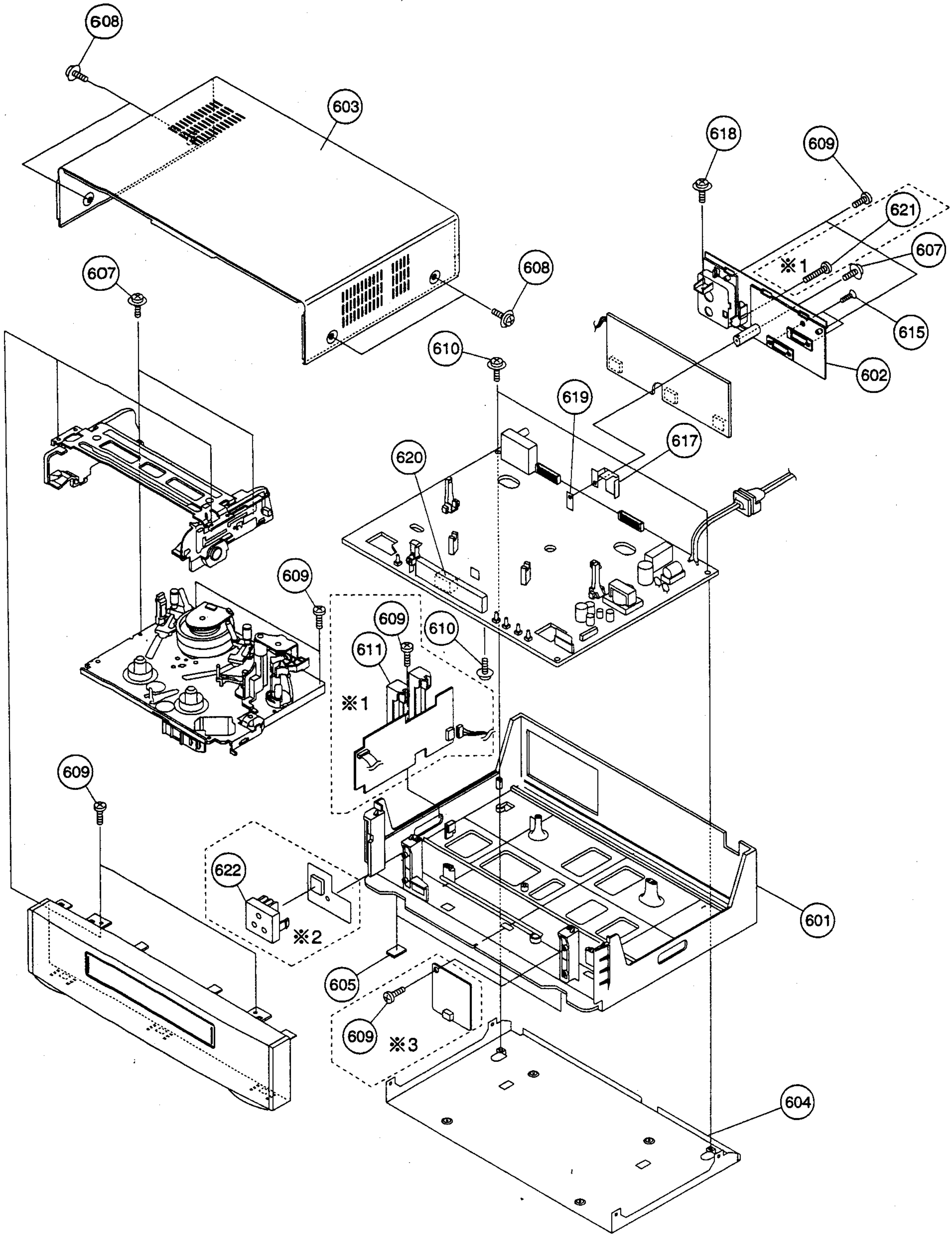
MACHANICAL PARTS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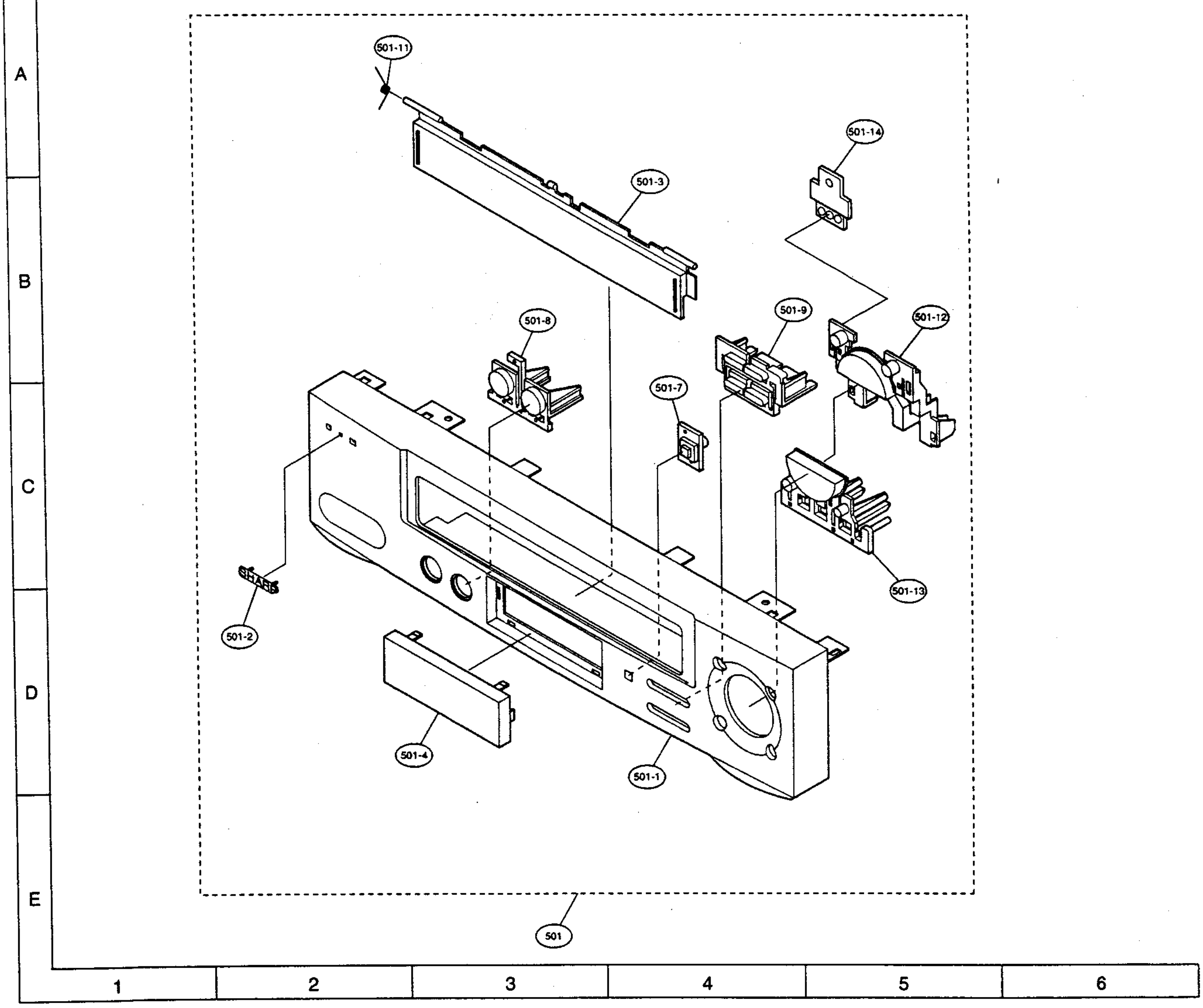
FRONT PANEL PARTS (VC-MH66FPM)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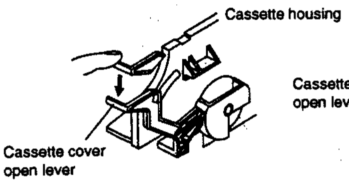
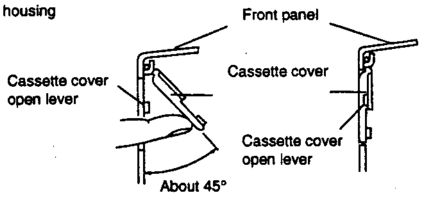
PRECAUTION ON FRONT PANEL SET-UP

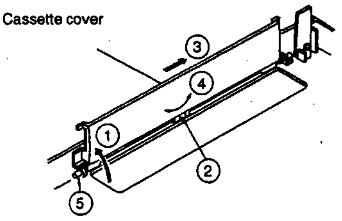

Cassette housing
Cassette cover open lever

Before attaching the front panel in position, make sure that the cassette cover open lever is in its right place (lower-most). If it is out of position, push it down with a finger.


Front panel
Cassette cover open lever
Cassette cover
Cassette cover open lever
About 45°

Keep the cassette over about 45° open and make sure that the cassette cover open lever is between the front panel and the cassette cover. Now fix the front panel in place.

Do not mount the front panel with the cassette cover tilted too open. Otherwise the cassette cover might wrongly run on the cassette housing.


Cassette cover
③
④
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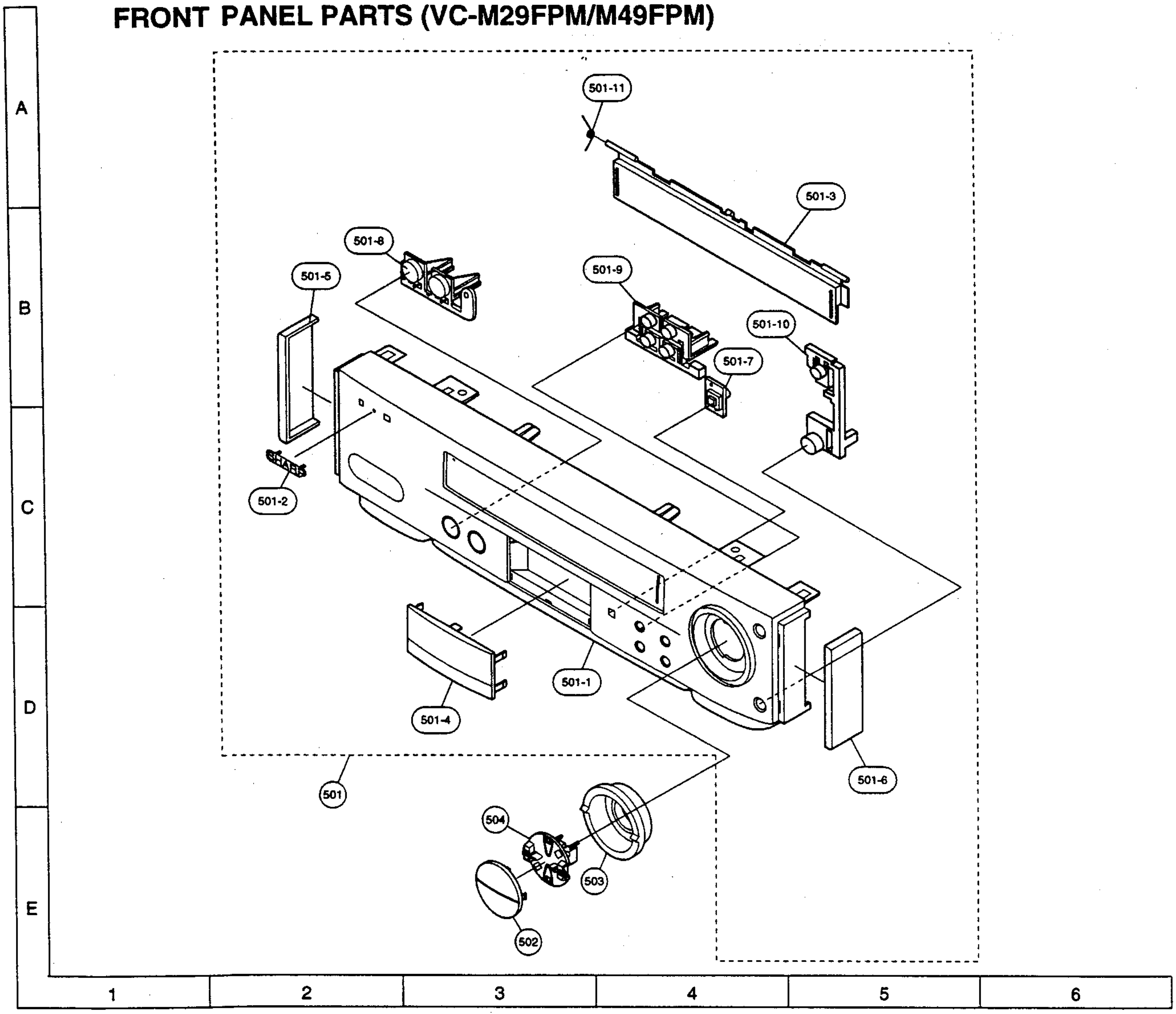
⑤

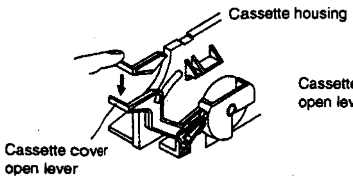
Removing the cassette compartment cover.

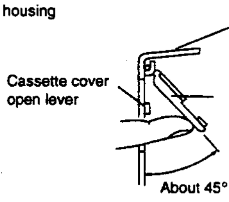
① Open the cassette compartment cover fully.
② Remove the center positioner.
③ Slide the cover to the right.
④ Slightly bend the cover.
⑤ Draw out the left-side rod.

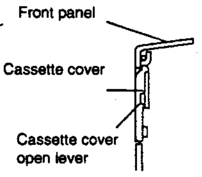
FRONT PANEL PARTS (VC-M29FPM/M49FPM)

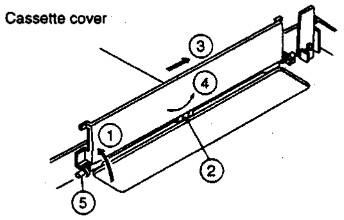

A
B
C
D
E
1
2
3
4
5
6
501-11
501-3
501-8
501-5
501-9
501-10
501-7
501-2
501-1
501-4
501-6
501
504
503
502

PRECAUTION ON FRONT PANEL SET-UP


Cassette housing
Cassette cover
open lever


Cassette cover
open lever
About 45°


Front panel
Cassette cover
Cassette cover
open lever


Cassette cover
③
④
①
②
⑤

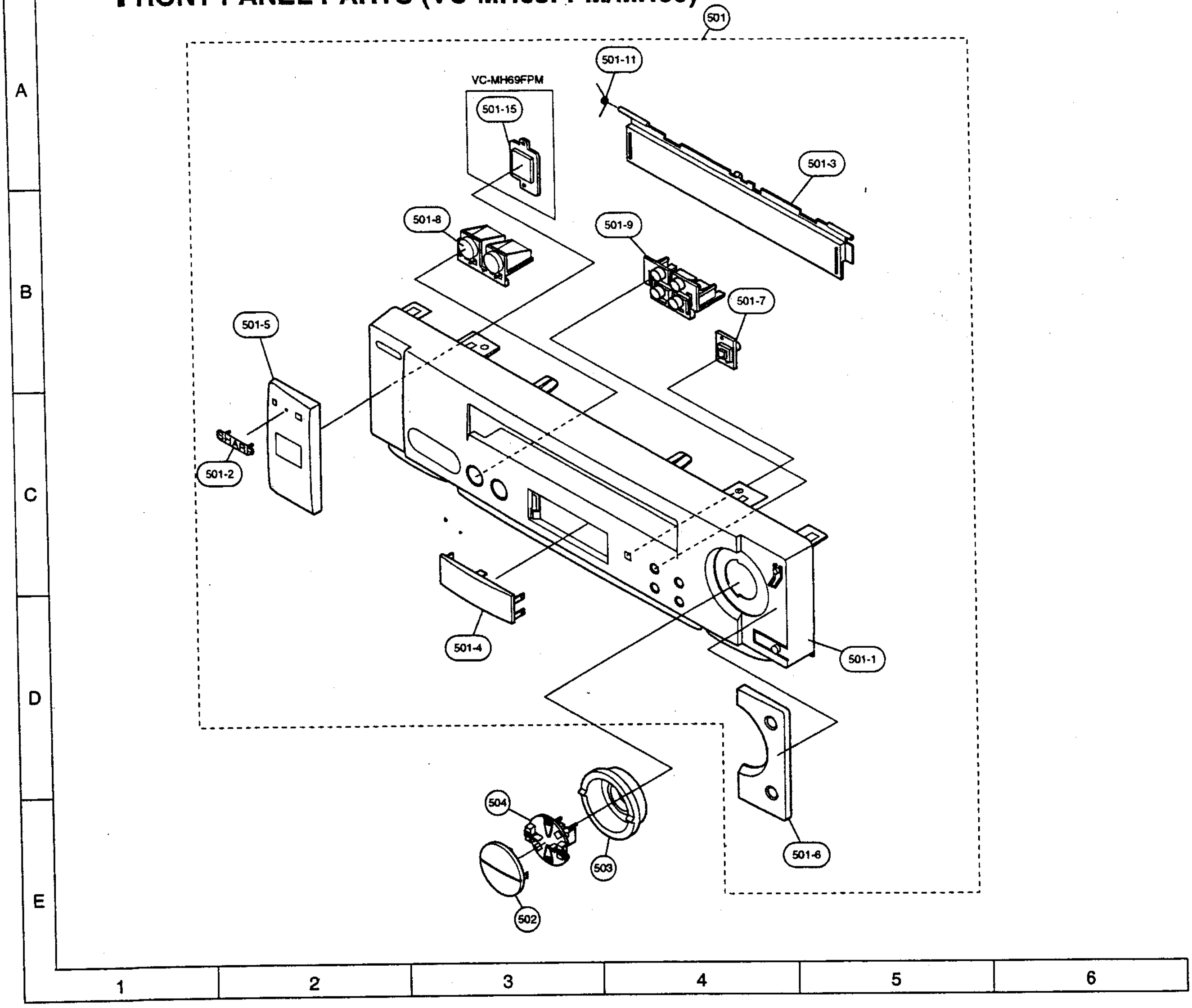
Before attaching the front panel in position, make sure that the cassette cover open lever is in its right place (lower-most). If it is out of position, push it down with a finger.

Keep the cassette over about 45° open and make sure that the cassette cover open lever is between the front panel and the cassette cover. Now fix the front panel in place.

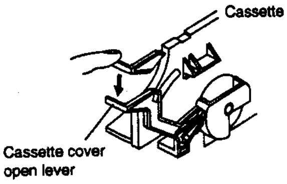
Do not mount the front panel with the cassette cover tilted too open. Otherwise the cassette cover might wrongly run on the cassette housing.

Removing the cassette compartment cover.
① Open the cassette compartment cover fully.
② Remove the center positioner.
③ Slide the cover to the right.
④ Slightly bend the cover.
⑤ Draw out the left-side rod.

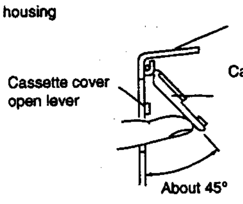
FRONT PANEL PARTS (VC-MH68FPM/MH69)


501
501-11
VC-MH69FPM
501-15
501-3
501-8
501-9
501-7
501-5
501-2
501-4
501-1
504
503
502
501-6
A
B
C
D
E
1
2
3
4
5
6

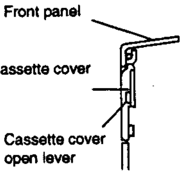
PRECAUTION ON FRONT PANEL SET-UP


Cassette housing
Cassette cover open lever

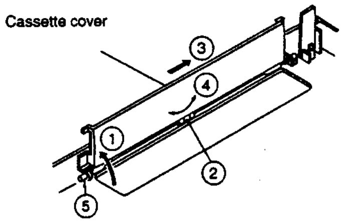
Before attaching the front panel in position, make sure that the cassette cover open lever is in its right place (lower-most). If it is out of position, push it down with a finger.


Front panel
Cassette cover open lever
Cassette cover
About 45°

Keep the cassette over about 45° open and make sure that the cassette cover open lever is between the front panel and the cassette cover. Now fix the front panel in place.


Cassette cover open lever

Do not mount the front panel with the cassette cover tilted too open. Otherwise the cassette cover might wrongly run on the cassette housing.

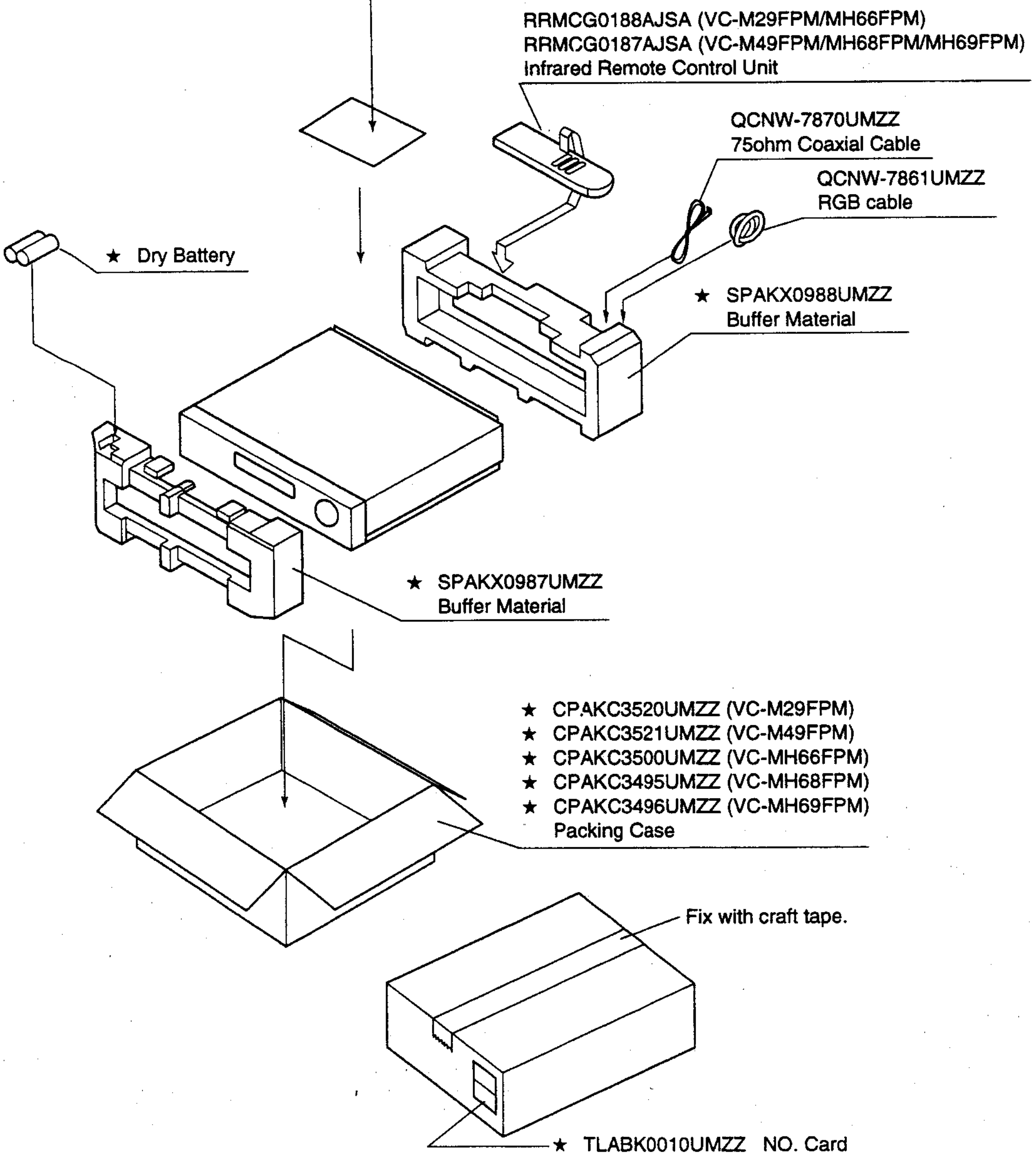

Cassette cover
③
④
①
②
⑤

Removing the cassette compartment cover.
① Open the cassette compartment cover fully.
② Remove the center positioner.
③ Slide the cover to the right.
④ Slightly bend the cover.
⑤ Draw out the left-side rod.

12. PACKING OF THE SET

Accessories

TiNS-3112UMZZ - Operation Manual (VC-M29FPM/M49FPM)
TiNS-3113UMZZ - Operation Manual (VC-MH68FPM/MH69FPM)
TiNS-3114UMZZ - Operation Manual (VC-MH66FPM)


RRMCG0188AJSA (VC-M29FPM/MH66FPM)
RRMCG0187AJSA (VC-M49FPM/MH68FPM/MH69FPM)
Infrared Remote Control Unit
QCNW-7870UMZZ
75ohm Coaxial Cable
QCNW-7861UMZZ
RGB cable
★ Dry Battery
★ SPAKX0988UMZZ
Buffer Material
★ SPAKX0987UMZZ
Buffer Material
★ CPAKC3520UMZZ (VC-M29FPM)
★ CPAKC3521UMZZ (VC-M49FPM)
★ CPAKC3500UMZZ (VC-MH66FPM)
★ CPAKC3495UMZZ (VC-MH68FPM)
★ CPAKC3496UMZZ (VC-MH69FPM)
Packing Case
Fix with craft tape.
★ TLABK0010UMZZ NO. Card

MARK ★ Not Replacement Item

TQ0294-S
Printed in Germany